Nortel Business Communications Manager 5.0

Administration and Security

Release: 5.0
Document Revision: 02.06

NN40170-603

Document status: Standard
Document issue: 02.06
Document date: November 2009
Product release: BCM 5.0
Job function: Administration
Type: Publication
Language type: EN

Copyright © 2009 Nortel Networks
All Rights Reserved.

NORTEL, the globemark design, and the NORTEL corporate logo are trademarks of Nortel Networks.

Contents

New in this release 11

Features 11

- Business Element Manager 11
- Command Line Interface 11
- User accounts 11
- System-wide security policies 12
- Back up and restore operations 12
- Log management 12
- Software updates 12
- Diagnostic tools 12

Introduction 13

BCM 5.0 management environment 15

BCM 5.0 web page 15

BCM 5.0 management environment and applications 19

- Management environment and applications navigation 19
- Managing BCM with Element Manager 19
- Managing BCM 5.0 with Telset administration 19
- Managing BCM 5.0 voicemail and contact center: CallPilot Manager 20
- Managing digital mobility 20
- Programming telephone sets: Desktop Assistant portfolio 20
- Performing initialization: Startup Profile 21
- Monitoring BCM 5.0: BCM Monitor 21
- Managing BCM 5.0 remotely with SNMP 21

Element Manager 22

Element Manager navigation 22

Element Manager setup 22

- Installing Element Manager on a Windows operating system 22
  23
- Installing Element Manager in a Citrix environment 23
- Adding a BCM 5.0 to the Network Element tree 26
- Finding Network Elements 26
- Connecting to a BCM 5.0 element 27

Copyright © 2009 Nortel Networks

Disconnecting from an element 28
28
28
Closing the Element Manager 29
Element Manager window attributes 29
Initial panel details 29
Configuration task navigation panel details 37
Element Manager panels 41
Effective use of Element Manager 42
Element Manager data features 43
BCM 5.0 integrated launch of related applications 54
BCM 5.0 feature licensing 55
BCM 5.0 Help system 56
Menu bar Help 57
Field-level Help 57
Context-sensitive Help 58
BCM 5.0 common file input/output processes 59
Comparison of data repositories 60

Security fundamentals 64
System security considerations 64
Secure protocols and encryption 66
Security audits 66
Firewalls 66
Site authentication 67
Security certificate 68
BCM 5.0 SSL certificate properties 68
Security policies 68
User account and group management 73
User account and group management navigation 73
User accounts 73
Default passwords 74
Default user account groups 75
Default access privilege (non-set) 79
Telset access security 87
Telset group access privileges 88
User account blocking 89
Accounts and Privileges 90
Accounts and Privileges navigation 90
Current account 90
View by accounts 91
View by account: general 93
View by account: remote access 94
View by account: history 95

Copyright © 2009 Nortel Networks

View by account: group membership 96
View by groups 97
View by groups: general 97
View by groups: members 98

Administration fundamentals 99

Data backup and restore 99
Data backup and restore navigation 99
Scope of data backup and restore 99
Backup options 100
BCM 5.0 backup file characteristics 101
Backup destinations 102
Restore optional components 103
Impact on system resources 104
Restore operations and logs 104
Log management 104
Log management navigation 105
Overview of BCM 5.0 logs 105
Log types 105
Log type navigation 106
Transferring and extracting logs 107
Log Browser 109
Log Browser navigation 110
Log Filtering and privacy 113
Hardware Inventory 113
Software updates and software inventory 114
BCM 5.0 utilities 114
Ping 115
Trace Route 115
Ethernet Activity 116
Reset 116
Reboot 116
Diagnostic Settings 117
IP Set Port Details 117
LAN IP Packet Capture 118
BCM Monitor 119
BCM Monitor—BCM Info tab 120
BCM Monitor—Media Card tab 121
BCM Monitor—Voice Ports tab 121
BCM Monitor—IP Devices tab 122
BCM Monitor—RTP Sessions tab 122
BCM Monitor—UIP tab 123
BCM Monitor—Line Monitor tab 123
BCM Monitor—Usage Indicators tab 124

Copyright © 2009 Nortel Networks

Auto-Administration Management 125
Auto-Administration Management operations 126
Service management system 128
SNMP MIBs 131
MIB file descriptions 131
Application launcher 134

System-wide security policies configuration 137
BCM 5.0 system entry policy definition 137
Configuring system access control policy 137
BCM 5.0 local authentication policy definition 138
Configuring credential complexity 138
Configuring lockout on failed login policy 139
Configuring the idle session timeout 139
Configuring password expiry policy 140
Configuring password history policy 140
BCM 5.0 authentication service policy definition 141
BCM 5.0 authentication service policy definition procedures navigation 141
Configuring the authentication method 141
Configuring the authentication server 142
Vendor specific attributes 143
BCM 5.0 SSL and SSH policy usage 145
BCM 5.0 SSL and SSH policy usage procedures navigation 145
Uploading a Web Server Certificate 146
Transferring an SSH Key-Pair 146

Accounts, groups, and privileges configuration 149
BCM 5.0 user account management 149
BCM 5.0 user account management procedures navigation 149
Adding a new user account 149
Modifying a user account 150
Adding Telset access for a user 151
Deleting a user account 151
BCM 5.0 feature additions for dial-up users 152
BCM 5.0 feature additions for dial-up users procedures navigation 152
Adding callback for a dial-up user 152
Adding NAT rules for a dial-up user 153
BCM 5.0 user password management 153
BCM 5.0 user password management procedures 153
Changing a user password 153
Changing the current user password 154
BCM 5.0 user group management 155
BCM 5.0 user group management procedures navigation 155
Creating a group 156
Deleting a group 156

Copyright © 2009 Nortel Networks

Modifying group privileges 156
Adding a user account to a group 157
Deleting a user account from a group 157
BCM 5.0 account enabling and disabling 158
BCM 5.0 account enabling and disabling procedures navigation 158
Reenabling a locked-out user 158
Enabling and disabling an account 159

Data backup and restore 160
On-demand backups 160
On-demand backup procedures navigation 160
Performing an immediate backup to your BCM 5.0 160
Performing an immediate backup to your personal computer 161
Performing an immediate backup to a network folder 162
Performing an immediate backup to a USB storage device 163
Performing an immediate backup to an FTP server 163
Performing an immediate backup to an SFTP server 164
Scheduled backups 165
Scheduled backup procedures navigation 165
Accessing the schedule of regular backups 165
Modifying scheduled backups 165
Deleting scheduled backups 166
Creating a scheduled backup to BCM 167
Creating a scheduled backup to a network folder 168
Creating a scheduled backup to a USB storage device 170
Creating a scheduled backup to an FTP server 171
Creating a scheduled backup to SFTP server 172
Data restoration 174
Data restoration procedures navigation 174
Restoring a backup from BCM 174
Restoring a backup from a PC 175
Restoring a backup from a network folder 176
Restoring a backup from USB storage 177
Restoring a backup from an FTP server 178
Restoring a backup from an SFTP server 179
Restoring the factory default configuration 180

BCM 5.0 log management system 182
Performing immediate log transfers 182
Performing an immediate log transfer to a USB storage device 182
Performing an immediate log transfer to a personal computer 183
Performing an immediate log transfer to a network folder 184
Performing an immediate log transfer to an FTP server 185
Performing an immediate log transfer to an SFTP server 186
Configuring scheduled log transfers 187

Copyright © 2009 Nortel Networks

Creating a scheduled log transfer 187
Modifying a scheduled log transfer 189
Deleting a scheduled log transfer 190
Transferring log files using the BCM 5.0 Web Page 191
Using the BCM 5.0 Web Page to transfer logs to your personal computer 191
Using the BCM 5.0 Web Page to transfer logs to other destinations 192
Using the Log Browser 193
Extracting the log file 194
Specifying retrieval criteria 194
Filtering retrieval results 195
Viewing details for a single log record 196
Viewing details for multiple log records 196
Selecting log filters 196
Viewing log files using other applications 197

BCM 5.0 hardware inventory 198

BCM 5.0 hardware inventory navigation 198
Viewing and updating information about the BCM 5.0 system 198
Viewing and updating information about the main unit 198
Viewing expansion daughter card information for BCM450 200
Viewing information about Daughter Cards on BCM50 201
Viewing and updating information about media bay modules 202
Viewing information about hard disk drives 203
Enabling Disk Mirroring 204
Viewing and updating system expansion information 204
Viewing and updating information about digital mobility controllers 205
Viewing and updating other system information 206
Viewing information about devices 207
Viewing information about attached devices 207
Viewing additional information 208
Viewing additional information 208

BCM 5.0 software updates 210

Viewing the software update history 210
Obtaining BCM 5.0 software update 211
Checking the status of a software update 212
Applying a software update 212
Applying a software update from your personal computer 213
Applying a software update from a USB storage device 214
Applying a software update from a network folder 216
Applying a software update from an FTP server 217
Applying a software update from an HTTP server 219
Scheduling a software update 220
Modifying a scheduled software update 223
Deleting a scheduled software update 224

Copyright © 2009 Nortel Networks

Viewing the software inventory 225
Removing a software update 225

Auto-Administration management 228
Enabling Auto-Administration Management feature 228
Creating the package 229
Distributing the package 230
Creating authentication certificates 230
Distributing the certificate 231
Fetching the patch from FTP server 231
Distributing the fetch patch 232

BCM 5.0 utilities 234
Pinging a device 234
Tracing a route 235
Viewing Ethernet activity 235
Resetting and rebooting 236
Warm reset 236
Cold reset 237
Rebooting 238
Creating a scheduled reboot 239
Modifying scheduled reboot 240
Deleting a scheduled reboot 241
Setting release reasons 241
Command Line Interface 242
Configuration CLI 242
Maintenance CLI 243

BCM Monitor installation and removal 244
Installing BCM Monitor (outside Element Manager) 244
Removing BCM Monitor (outside Element Manager) 245

BCM Monitor connection 246
Starting BCM Monitor within Element Manager 248
Starting BCM Monitor outside Element Manager 248
Disconnecting from a BCM system 249
Connecting to another BCM system 249

Using BCM Monitor 252
System status snapshots 252
Configuring BCM Monitor for static snapshots 253
Saving a static snapshot 255
Configuring BCM Monitor for dynamic snapshots 255
Using the dynamic snapshot utility 257
UIP information analysis 257
Enabling UIP message monitoring 258

Copyright © 2009 Nortel Networks

Disabling UIP message monitoring 259
Logging UIP data 260
Accessing UIP log files 260
Disabling UIP timeout settings 260
Accessing message detail information elements 261
Clearing message detail information elements 261
Line summary 262
BCM Monitor statistics 262
Viewing current, minimum, and maximum values 262
Resetting logged minimum and maximum values 263

Application Launcher 264
Accessing the Application Launcher through a web browser 264
Accessing the Application Launcher through a shortcut link on your desktop 265
Uploading a custom configuration file 266
Importing custom branding 267

BCM 5.0 service management system 268
Managing services 268
Viewing details about services 268
Stopping a service 269
Restarting a service 269

BCM 5.0 Management Information Bases 272
Accessing MIB files 272
Accessing MIB files from the BCM web page 272
Accessing MIB files from the Nortel Customer Service site 273

Copyright © 2009 Nortel Networks

New in this release

The information in this chapter applies to both the BCM50 and the BCM450 platforms running BCM 5.0.

This document contains information about the tools available for administering and managing the BCM system in Release 5.0.

Navigation

- Features (page 11)

Features

This document contains information about the following features in Release 5.0.

Business Element Manager

The Business Element Manager is the primary management application for BCM 5.0 systems. The BCM Element Manager is a client-based management application that runs on a Windows computer. The Element Manager allows for connection to BCM 5.0 devices over an IP network. It encompasses not only telephony programming, but also administrative functions such as backup management, software update management, and log management.

Command Line Interface

You can use the Command Line Interface (CLI) to configure basic settings, as well as shut down, reboot, or reset the BCM 5.0 system. The CLI is available when you connect to the BCM 5.0 through SSH using TCP/IP, or by connecting through a serial console. Two CLI modes are available: Maintenance CLI, and Configuration CLI.

User accounts

The BCM 5.0 supports a large number of user accounts. You can configure up to a total of 1999 user accounts, including the default accounts, such as nnadmin and nnguest. For more information about user accounts, see Security fundamentals (page 64) and Accounts, groups, and privileges configuration (page 149).

Copyright © 2009 Nortel Networks

System-wide security policies

You can use Element Manager to configure system-wide security policies, such as authentication methods, password policies, and other access policies. For more information about security policies, see Security fundamentals (page 64) and System-wide security policies configuration (page 137).

Back up and restore operations

You can schedule back up operations, or perform on-demand backups to different storage locations. You can also use Element Manager to perform restore operations. For more information about backup and restore operations, see Data backup and restore (page 160).

Log management

You can view and manage log archives generated by the BCM 5.0. For more information about managing logs, see BCM 5.0 log management system (page 182).

Software updates

You can use Element Manger to apply software updates to the BCM 5.0. You can also view an inventory of the software components installed on your system. For more information about software updates, see BCM 5.0 software updates (page 210).

Diagnostic tools

The BCM 5.0 provides a variety of diagnostic tools, including BCM Monitor, ping and route trace functions, and the ability to view Ethernet activity. For more information about the diagnostic tools available, see BCM 5.0 utilities (page 234) and Using BCM Monitor (page 252).

Copyright © 2009 Nortel Networks

Introduction

The information in this chapter applies to both the BCM50 and the BCM450 platforms running BCM 5.0.

This document contains concepts, operations, and tasks related to the management features of the BCM 5.0 system. This guide also describes additional administrative tasks, such as backups, software updates, monitoring, and inventory management.

Navigation

- BCM 5.0 management environment (page 15)
- Security fundamentals (page 64)
- Administration fundamentals (page 99)
- System-wide security policies configuration (page 137)
- Accounts, groups, and privileges configuration (page 149)
- Data backup and restore (page 160)
- BCM 5.0 log management system (page 182)
- BCM 5.0 hardware inventory (page 198)
- BCM 5.0 software updates (page 210)
- Auto-Administration management (page 228)
- BCM 5.0 utilities (page 234)
- BCM Monitor installation and removal (page 244)
- BCM Monitor connection (page 246)
- Using BCM Monitor (page 252)
- Application Launcher (page 264)
- BCM 5.0 service management system (page 268)
- BCM 5.0 Management Information Bases (page 272)

Copyright © 2009 Nortel Networks

Copyright © 2009 Nortel Networks

BCM 5.0 management environment

The information in this chapter applies to both the BCM50 and the BCM450 platforms running BCM 5.0.

This chapter contains information on the different tools available for managing your BCM50 system. It also describes the Element Manager application in detail. It includes the following sections:

Navigation

- BCM 5.0 web page (page 15)
- BCM 5.0 management environment and applications (page 19)
- Element Manager (page 22)
- Element Manager navigation (page 22)
- Element Manager setup (page 22)
- Element Manager window attributes (page 29)
- BCM 5.0 feature licensing (page 55)
- BCM 5.0 Help system (page 56)
- BCM 5.0 common file input/output processes (page 59)

BCM 5.0 web page

The BCM 5.0 web page facilitates the download of applications, documentation, and other information necessary for running the BCM and its services. You connect to the BCM 5.0 web page by typing the IP address of your BCM 5.0 device into your browser. A valid user name and password are required in order to access the web page.

There are two default user accounts configured on the BCM at time of shipping: the nnadmin user account and the nnguest user account.

You can choose to make the nnguest account available to general users. This account can be configured to provide users with access to download end-user documents and applications that they require from the BCM 5.0 web page.

Copyright © 2009 Nortel Networks

The BCM web page Application Launcher provides the following options on the main tab:

- BCM - Allows you to launch any of the installed BCM applications or documents.
- 3rd Party - allows you to launch any installed 3rd party applications or documents.

The applications available from the BCM 5.0 webpage are supported on Windows XP, Windows Vista, and Windows Server 2003 and 2008 operating systems. Some applications, such as BCM Monitor, are also supported on a Citrix operating system.

Table 1 Applications available on BCM 5.0 web page

Application	User	Administrator
User Applications		
Mailbox Manager	Y	Y
Desktop Assistant Pro	Y	Y
CallPilot Unified Messaging	Y	Y
Personal Call Manager	Y	Y
LAN CTE Client	Y	Y
IP Software Phone 2050*	Y	Y
Mobile Voice Client 2050	Y	Y
Nortel VPN Client*	N	Y
Business Applications		
Reporter Applications		
Activity Reporter Basic	N	Y
Activity Reporter	N	Y
Contact Center Applications		
Reporting for Contact Center	N	Y
Contact Center Reporting Server	N	Y
Multimedia Contact Center	N	Y
IP View Softboard	N	Y
Administrator Applications		
Administrator Management Tools		
CallPilot Manager	N	Y

Copyright © 2009 Nortel Networks

Table 1 Applications available on BCM 5.0 web page

Application	User	Administrator
Business Element Manager	N	Y
Desktop Assistant Pro AE	N	Y
NCM for BCM	N	Y*
BCM Monitor	N	Y
CDR Clients	N	Y
BCM MIBs	N	Y
RADIUS Dictionary	N	Y
SSH Client (PuTTY)	N	Y
BCM Logs	N	Y
Digital Mobility Tools		
Digital Mobility Controller	N	Y
Digital Mobility Service Tool	N	Y
Startup Profile Template	N	Y
Factory Default Programming Record	N	Y

* Provides a description of the application and information about where to find it.

Administrator documentation is provided in English. User documentation is provided in the following languages:

- English
- French
- Danish
- German
- Spanish
- Dutch
- Italian
- Norwegian
- Swedish
- Portuguese

Copyright © 2009 Nortel Networks

From the advanced tab, you can remove downloaded applications, upload custom branding web pages to replace the default Nortel branding, and uploaded custom configurations. For more information about configuring Application Launcher, see Application Launcher (page 264).

Using custom Application Launcher configurations you can:

- Provide other download locations for standard BCM Applications
- Hide applications
- Add new URLS or Applications to the 3rd Party Application list

Custom configurations are uploaded as an XML file. You can access an example configuration file at https://bcmipaddress/ApplicationLauncher.xml. The main XML tags are:

- <config> - the file must be enclosed using the <config> and </config> tags
- <category> - Changes to BCM supported applications must be enclosed in <category name="BCM Applications"> and </category> tags. New third party applications and web links must be enclosed in <category name="Additional Applications"> and </category> tags

The category tag can contain applications. The <application> tag defines an application or web link that will be added to the BCM. An <application> tag can have the following settings:

- name – required for all applications
- visible – optional field set to “true” if its always visible and false if it should be hidden
- version – a non-space field that contains the version of the application
- folder – the sub folder in which the application will be installed.

There are two types of applications including web URLs and executable applications.

An executable application can contain the following tags:

- exec – the executable to run. There are two supported executable formats: “.bat” files and “.exe” files.
- download – a URL that contains the application to be downloaded

A web URL application can contain the following tag:

- url – the URL of the application

Copyright © 2009 Nortel Networks

BCM 5.0 management environment and applications

A number of tools are available to help manage your BCM. This section describes the following tools:

Management environment and applications navigation

- Managing BCM with Element Manager (page 19)
- Managing BCM 5.0 with Telset administration (page 19)
- Managing BCM 5.0 voicemail and contact center: CallPilot Manager (page 20)
- Managing digital mobility (page 20)
- Programming telephone sets: Desktop Assistant portfolio (page 20)
- Performing initialization: Startup Profile (page 21)
- Monitoring BCM 5.0: BCM Monitor (page 21)
- Managing BCM 5.0 remotely with SNMP (page 21)

Managing BCM with Element Manager

The primary management application for configuring and administering the BCM 5.0 system is the BCM Element Manager. The BCM Element Manager is a client-based management application that runs on a Windows computer, or on a Citrix server. The BCM Element Manager allows for connection to BCM 5.0 devices over an IP network. It is used to configure, administer, and monitor BCM 5.0 devices.

You can download the BCM Element Manager application from the BCM 5.0 web page. See BCM 5.0 web page (page 15) for a description of the BCM50 web page. The procedure Installing Element Manager on a Windows operating system (page 22) provides detailed steps for downloading and installing the BCM Element Manager on a Windows computer.

Managing BCM 5.0 with Telset administration

While BCM Element Manager is the primary management application, BCM 5.0 also supports the programming of telephony and applications areas of BCM 5.0 through set-based administration. This allows installers, already familiar with this interface, to perform programming from the keypad of any telephone connected to the BCM 5.0 device. This alleviates the need for access to a computer at the customer site. For more information about using Telset programming on the BCM, refer to the following documents:

- *Telset Administration Guide (NN40170-604)*
- *CallPilot Manager Telephone Administration Guide (NN40170-601)*
- *Intelligent Contact Center Telephone Administration Guide (NN40170-600)*

Copyright © 2009 Nortel Networks

Managing BCM 5.0 voicemail and contact center: CallPilot Manager

The integrated voicemail and contact center applications are managed using CallPilot Manager, which can be launched from Element Manager. This is the same application used to manage voicemail and contact center applications for the BCM Release 3 software stream. For more information about using CallPilot Manager, refer to the CallPilot documentation on the BCM 5.0 web page.

CallPilot Manager can be launched only by users with sufficient security privileges. BCM 5.0 administrators must assign privileges.

Managing digital mobility

Digital mobility is managed using applications that you can download from the BCM 5.0 webpage. Two applications are available:

- Digital Mobility Controller (DMC) OAM program
- Digital Mobility Service Tool

You can use the DMC OAM program to configure, operate, and administer the wireless system through the DMC. Use the Digital Mobility Service Tool to program repeaters and adjust handsets.

Programming telephone sets: Desktop Assistant portfolio

The Element Manager supports the programming of button functions for the digital and IP telephone sets. Some administrators may want to use the Desktop Assistant family of products to complete the customization of button programming and generate labels for the telephone sets. The Desktop Assistant family of applications can be downloaded from the BCM 5.0 web page. Documentation for these applications is included within the application interface.

The Desktop Assistant family of products consists of:

- Desktop Assistant Pro
- Desktop Assistant Pro AE

For more information about Desktop Assistant tools, see the *BCM 5.0 Configuration – Devices (*NN40170-500)

Attention: You require a LAN CTE keycode to operate Desktop Assistant Pro and Desktop Assistant Pro AE. See the LAN CTE Configuration Guide (NN40010-601) for more information about installing and using LAN CTE.

Copyright © 2009 Nortel Networks

Performing initialization: Startup Profile

The Startup Profile is a template that can be edited using Microsoft Excel. It is used to accelerate the initial installation programming of system-level parameters. It helps bring the BCM 5.0 element to a basic operational and ready-to-customize state without using either BCM Element Manager or Telset administration.

The administrator must fill out the Startup Profile template, save it onto a USB storage device and insert the storage device into the USB port of the BCM 5.0 before the initial start-up. On start-up the BCM 5.0 reads the information, and starts up with the correct system parameters and feature licensing already in place.

Some of the parameters included in the Startup Profile are:

- system name
- system profile such as country, telephony template and key voicemail attributes
- system IP parameters
- system level telephony attributes that automatically create default system DNs
- feature licensing
- user accounts
- modem status

For detailed information on the Startup Profile, see the BCM50 5.0 Installation and Maintenance Guide (NN40170-305).

Monitoring BCM 5.0: BCM Monitor

The BCM Monitor is a monitoring and diagnostics tool that can monitor BCM systems. It is installed as part of the BCM Element Manager installation.

Managing BCM 5.0 remotely with SNMP

Simple Network Management Protocol is a standard for network management. BCM 5.0 supports a number of standard MIBs, including:

- MIB II RFC 1213
- Entity MIB RFC 2737
- Host MIB RFC 2790
- IF-MIB (RFC2863)
- SNMP-Framework-MIB (RFC2261)

SNMPv1, v2c and v3 are supported, as well as SNMP traps.

Copyright © 2009 Nortel Networks

Element Manager

The BCM Element Manager is a client-based management application that runs on a Windows computer or on a Citrix server. The Element Manager allows for connection to BCM 5.0 devices over an IP network. It is used to configure, administer, and monitor BCM 5.0 devices.

The BCM Element Manager allows you to connect to the BCM 5.0 devices to be managed either through an IP network connection, or through the craftsperson OAM port on BCM 5.0 devices that include a craftsperson port.

This section includes the following information on how to install and use BCM Element Manager:

Element Manager navigation

- Element Manager setup (page 22)
- Element Manager window attributes (page 29)
- BCM 5.0 feature licensing (page 55)
- BCM 5.0 Help system (page 56)
- BCM 5.0 common file input/output processes (page 59)

Element Manager setup

You must perform a series of tasks before you can begin using BCM Element Manager. This section contains the following procedures for preparing BCM Element Manager for use:

Installing Element Manager on a Windows operating system

You can download the BCM Element Manager application from the BCM 5.0 web page and install it on your computer at any time. However, you cannot connect to a BCM 5.0 with BCM Element Manager until the BCM 5.0 main unit is installed and running.

The BCM Element Manager has the following system requirements:

- Windows: Windows XP, or Windows Vista (Business, Ultimate, and Enterprise versions)
- Citrix: Citrix Presentation Server 4.0
- RAM: minimum 256 MB, recommended 512 MB
- free space: 150 MB

To install Element Manager on your computer:

Copyright © 2009 Nortel Networks

Step	Action

Attention: Nortel recommends installing the latest Java JRE version 1.6. Application Launcher will attempt to install the required Java JRE but the desktop PC where Element Manager will be used requires network connectivity.

1 Connect to the BCM 5.0 web page:

If the BCM 5.0 is installed on the network use a browser and type in the BCM 5.0 IP address as the URL in the following format:

http://xxx.xxx.xxx.xxx

If the BCM 5.0 is installed but not yet configured, connect directly to the BCM 5.0 through the OAM port and, using a browser, type the following:

http://10.10.11.1/

2 Enter the user name and password to be authenticated on the BCM 5.0 web page.

3 Select the **BCM Button** from the BCM splash screen.

4 Select the **Business Element Manager** link from the Applications window.

5 Select the **Run** button.

6 Follow the prompts to install the Element Manager and BCM Monitor on your computer.

If you choose to perform a new installation, you can copy the existing resources to the new installation, including the device tree, cartridges, and user preferences.

BCM Monitor replaces any older versions of BCM Monitor already installed on your computer.

Note: A desktop link to Element Manager will be created automatically during Application Launcher's install of the Element Manager.

--End--

Installing Element Manager in a Citrix environment

You can run Element Manager in a Citrix environment, using the following software:

Windows 2003

Copyright © 2009 Nortel Networks

- Citrix Presentation Server 4.0

When you run Element Manager in a Citrix environment, the Element Manager is installed on a Citrix server. Users then run Citrix Program Neighborhood to connect to the server and launch the Element Manager.

Element Manager is designed for single-user environments. A single installation of Element Manager will extend the same user preferences to any Citrix user, including the device list and any saved passwords. Citrix administrators can ensure a secure environment by using one of the following approaches:

- install a copy of Element Manager for each user or group of users in different folders, with Windows permissions set for the folder to control access
- in cases where a shared device tree is permitted, ensure that users do not save passwords, but instead enter a password each time they connect

To install Element Manager on a Citrix server:

Step	Action
1	From the Citrix server, connect to the BCM 5.0 web page: If the BCM 5.0 is installed on the network use a browser and type in the BCM 5.0 IP address as the URL in the following format: http://xxx.xxx.xxx.xxx If the BCM 5.0 is installed but not yet configured, connect directly to the BCM 5.0 through the OAM port and, using a browser, type the following: http://10.10.11.1/
2	Enter the user name and password to be authenticated on the BCM 5.0 web page.
3	Select the **Administrator Applications** link.
4	Select the BCM **Element Manager** link from the Administrator Applications web page.
5	Select the **Download Element Manager** link from Element Manager download page.
6	Select the **Open** button on the **File Download** dialog box to download and install the BCM Element Manager on your computer.
7	Put the Citrix server in install mode by selecting **Add/Remove Programs > Add New Program > CD or Floppy**, or by entering the change user/install command from the DOS prompt.
8	Follow the prompts to install the Element Manager and BCM Monitor on your computer.

Copyright © 2009 Nortel Networks

If an older version of Element Manager is already installed on your computer, you can choose to update the existing installation, or perform a new installation. If you choose to perform a new installation, you can copy the existing resources to the new installation, including the device tree, cartridges, and user preferences.

BCM Monitor replaces any older versions of BCM Monitor already installed on your computer.

9 Put the Citrix server in execute mode by closing the After Installation window, or by entering the change user/execute command from the DOS prompt.

10 Publish the Element Manager application to make it available to the users using standard Citrix application publishing.

--End--

Accessing BCM 5.0 using Element Manager

The first time BCM Element Manager opens it displays two panels. The Element Navigation Panel located on the left, enables you to create a definition within Element Manager for each BCM 5.0 to be managing using BCM Element Manager. You can then use the icons for the elements defined within the Element tree to perform various functions associated with that element, such as connecting to the element or viewing log files associated with that element.

Creating folders for network elements

Before you add a BCM 5.0 to the network element tree, you can create folders and subfolders to organize the devices in your network.

Step	Action
1	While disconnected from the BCM 5.0 device, click the **New Folder** icon on the task bar. You can also right-click on **Network Elements** in the Network Element Navigation panel, and select **New Folder**.
2	Right-click on the new folder and select **Rename**.
3	Enter a name for the folder.

--End--

Copyright © 2009 Nortel Networks

Adding a BCM 5.0 to the Network Element tree

Before you can connect to a BCM 5.0, you must define it in Element Manager as a Network Element.

Step	Action
1	Select **Network Elements** from the Network Element Navigation panel, or, if you have defined subfolders, select the subfolder where you want to save the device. You can define subfolders by right-clicking on **Network Elements** and selecting **New Folder**. If you want to move devices between folders they must be deleted from the old folder and recreated in the new folder.
2	Select **Network** from the menu bar or right-click on the folder heading.
3	Select **New Network Element > Business Communications Manager.**
4	In the **Business Communications Manager Entry** dialog box, enter the IP address for the new network element.
5	Enter the **Read-Write Community String**, if it is present. The **Read-Write Community String** is only present if SNMP is enabled. SNMP is disabled by default. The default SNMP **Read-Write Community String** is public. Contact your system administrator to find out the correct SNMP community string to use.
6	Click **OK** to exit the dialog box.
7	An icon representing the newly defined element with its associated IP address appears on the Network Elements tree.

Attention: If you want to change the IP address to a name or other type of identification, triple-click the IP address or right-click once on the IP address. Once the field becomes editable, type in the new information.

--End--

Refer to Element Manager window attributes (page 29) for a detailed description of the common Element Manager window elements.

Next steps: Proceed to Connecting to a BCM 5.0 element (page 27)

Finding Network Elements

You can search for a group of BCMs located on the same subnet by using **Find Network Elements**. This function uses SNMP to search for all of the BCMs in the specified IP address range and add them to the Element

Copyright © 2009 Nortel Networks

Navigation tree. Only BCMs with SNMP enabled will be detected. This tool saves time when trying to quickly populate Element Manager with previously deployed BCMs for the first time.

Use the following procedure to find network elements:

Step	Action
1	Right-click the **Network Elements** icon in the Element Navigation Panel.
2	Select **Find Network Elements > Business Communications Manager**.
3	Enter the **Start of IP Address range** and press the tab key.
4	Enter the **End of IP Address range** and press the tab key.
5	Enter your user name in the **User ID** field and press the **Tab** key.
6	Enter your password in the **Password** field.
7	Click on the **OK** button The Element Manager searches for the IP addresses specified in the range. If the search is successful, the BCMs found within the IP address range are added to Network Elements tree in the Element Navigation Panel. If the search is unsuccessful a Network Elements dialog box appears stating No network elements found.

--End--

Connecting to a BCM 5.0 element

Use the following steps to connect to your BCM 5.0 once it is defined in the Element Manager:

Step	Action
1	On the Network Elements tree, select the element to which you wish to connect by selecting the IP address or element name as it appears in the Network Element tree. Login fields appear in the Information panel.
2	Enter your log in credentials for the BCM 5.0 to which you are trying to connect.
3	Perform one of the following tasks to connect to the BCM 5.0: Click the **Connect** icon on the Icon toolbar Right-click on the IP address or element name and select **Connect**

Copyright © 2009 Nortel Networks

4	The Element Manager attempts to connect to the selected element. If the connection is successful, Element Manager opens the Configuration and Administration tabs associated to the selected device. See Element Manager panels (page 41) for an explanation of the Element Manager screen layout. If the Element Manager fails to connect, an error message appears, describing the connection problem. Correct the problem and perform the steps again. If you have a recurring problem, contact Nortel Support for help in resolving the problem.

--End--

Disconnecting from an element

You can disconnect Element Manager from a BCM 5.0 by using one of the following:

- Disconnecting in the Element Navigation Panel (page 28)
- Disconnecting through the menu bar (page 28)

Disconnecting in the Element Navigation Panel

Step	Action
1	Right-click the IP address that you want to disconnect, in the Network Element Navigation Panel.
2	Select **Disconnect**.
3	Click **Yes** in the Confirmation dialog box to confirm the disconnect request.

--End--

Disconnecting through the menu bar

Step	Action
1	Click **Session** on the menu bar.
2	Select the IP address of the device you want to disconnect.
3	Select **Disconnect** from the list of tasks that are displayed.
4	Click **Yes** in the Confirmation dialog box to confirm the disconnect request.

Copyright © 2009 Nortel Networks

Attention: Clicking the X box on the upper right corner causes the Element Manager application to close and all current sessions with BCM 5.0 devices are terminated. Do not click on the X box to disconnect Element Manager from its current session.

--End--

Closing the Element Manager

To close the Element Manager select **File > Exit**, or click on the X box on the upper right corner of the window. Close all active sessions before you close the Element Manager application.

Element Manager window attributes

The initial Element Manager window has several attributes that appear regardless of whether the Element Manager is actively connected to a network element. Although all of the network elements appear, some of the menu options may not be available for the selected device, depending on the device's state.

The following sections describe the menus and information available on the Element Manager panel:

- Initial panel details (page 29)
- Configuration task navigation panel details (page 37)

Initial panel details

Figure 2 shows the initial panel of a newly-installed Element Manager. At this point, no network elements have been defined, and the Element Manager is not connected to any elements.

Copyright © 2009 Nortel Networks

Figure 1 Element Manager Window - no defined Elements

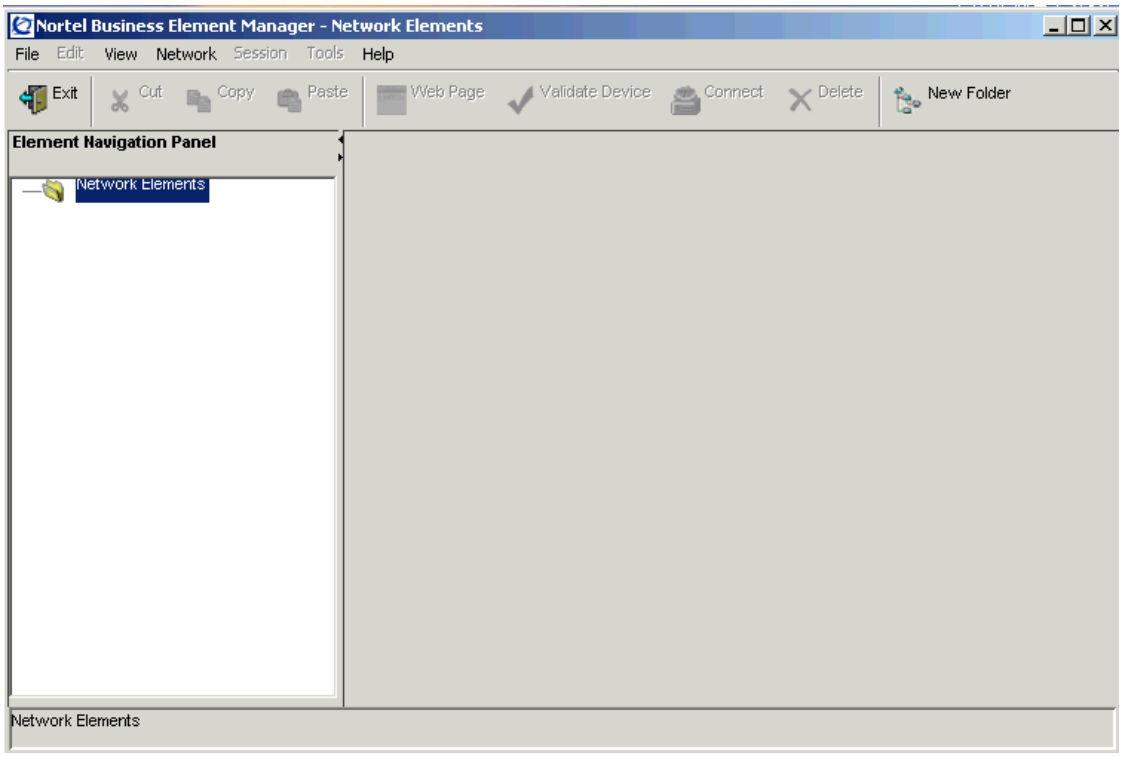


Table 16 lists and describes the initial Element Manager window.

Table 2 Initial Element Manager window attributes

Element	Description
Title bar	When you connect to a device, this area indicates the type of device (Nortel Networks BCM Element Manager - Network Elements) and the IP address for the connected device.
Menu bar	The items on the menu bar are static, however, some items may be greyed out at various stages.
File	This menu provides two selections: • Exit: a standard exit prompt that closes the Element Manager application. You can also click on the X box on the upper right corner of the window or click Ctrl-X • View Network Element Logs: opens a dialog box that allows you to search for and to view logs that are available for the connected element.

Copyright © 2009 Nortel Networks

Table 2 Initial Element Manager window attributes

Element	Description
View	This menu provides three selections: • Preferences: Allows you to choose a different appearance for the Element Manager window. • Network Elements: Enabled by default. If you uncheck this setting, the Network Elements panel closes (far left panel). This does not disconnect any connected device. • Refresh (F5): Allows you to refresh the data shown on the window.

Copyright © 2009 Nortel Networks

Table 2 Initial Element Manager window attributes

Element	Description
Network	This menu is not available when a connected device is selected. When the Network Elements folder icon is selected in the Network Elements tree the following options are available: • New Folder: Allows you to create a new folder on the Network Elements tree. Folders allow you to organize your devices. • New Network Element: Allows you to create a new entry under the Network Elements tree. This menu item opens up a dialog box that allows you to enter access parameters for a new Business Communications Manager device to which you want to connect. Once you have connected to the device, this information is saved by Element Manager and the device remains present in the Network Elements tree. Required information is the IP address for the device with which you want to connect. • Find Network Elements: Opens a search dialog box that allows you to do search for devices within a range of IP addresses by using an SNMP query. This function only locates BCMs that have SNMP turned on (by default, SNMP is turned off). When an unconnected device is selected in the network element tree, the following options are available under the Network selection: • Delete: Allows you to delete the original entry in the Element Manager network element tree and create a new instance of a network element in the tree with a new IP address. If the IP address of the device changes, you must delete the original entry in the Element Manager network element tree and create a new instance of a network element in the tree with a new IP address. • Connect: When selected, Element Manager attempts to open a connection to the selected element. You can also connect to a network element by right-clicking on the selected element. • Webpage: When selected, shows the web page for the selected device. • Validate Device: When selected, interrogates the device and check for any changes.

Copyright © 2009 Nortel Networks

Table 2 Initial Element Manager window attributes

Element	Description
Session	Allows you to select actions for any of the network elements to which there is a currently active Element Manager session. If there are no active Element Manager sessions, then this selection will be greyed out. • Show: If multiple devices are connected, allows you to easily select one of the connected elements from the presented list and switch the active Element Manager view to that element. • Disconnect: Allows you to disconnect from the device. A warning dialog box is presented asking if you really want to disconnect from the device. You can also disconnect from a device by right-clicking on the device in the network element tree and selecting "Disconnect". The Element Manager remains open. • Save Programming Record: Allows you to save programmed information in either Microsoft Excel format or HTML.
Tools	This selection provides a point from which tools relevant to the selected element can be launched. This prompt is only active when a connected device is selected on the Network Elements tree. • BCM Monitor: This is a separate application, which can be installed at the same time as Element Manager and provides a number of panels that display current system operational information.
Help	Provides information to assist in using the Element Manager. • PDF Documents: Provides a link to the documentation interface, on the Business Communications Manager web page, where you can find various PDF books describing the BCM 5.0 system and programming. • Contents: Provides a link to the help system. **Note**: A brief function description appears when you mouse over field headings. You can also access help contents by clicking on a heading and pressing F1. Refer to BCM 5.0 Help system (page 56) for more details on Element Manager help available. • Application Log: Collects messages generated by the Element Manager during normal operations. • Customer Support: Provides a link to a Nortel Networks customer support web site. • About: Provides information about the Element Manager, such as the Element Manager Release level.

Copyright © 2009 Nortel Networks

Table 2 Initial Element Manager window attributes

Element	Description
Icon Toolbar	Icons are available if the Network Elements folder is at the top of Network Elements tree or if an unconnected device is selected. • Exit: Click this icon to exit BCM. • Cut: Select a network element and click this icon to mark that network element for cutting. • Copy: Select a network element and click this icon to mark that network element for copying. • Paste: With no network element selected, click this button to paste a cut or copy network element into the list of available network elements. • Webpage: Click this button to show the web page for the selected device. • Validate Device: Click this button to interrogate the device and check for any changes. • Connect: Connects the Element Manager to the selected device. • Delete: Allows you to delete the selected device from the Network Elements tree. • New Folder: Adds a new folder under the Network Elements tree. This icon only works when the Network Elements title is selected.

Copyright © 2009 Nortel Networks

Table 2 Initial Element Manager window attributes

Element	Description
Network Elements navigation panel	This panel contains the Network Element Navigation tree which displays devices and groups of devices (folders). • The following actions are available in the Network Element navigation panel: Add items: Add Network Elements or folders by right-clicking, or use the selections under the Network menu or the Icon tool bar. Delete items: Select the device or folder and right-click, or use the selections under the Network menu or the Icon toolbar. Connect/Disconnect: Select the device and right-click, or use the selections under the Network menu or the Icon tool bar. • The following actions are available if you right-click on an network element listed in the Network Element Navigation tree. Connected items - Disconnect or view logs Unconnected items - Connect, delete, or view logs • You can rename a folder or a network element by triple-clicking it or by right-clicking the network element and updating the name when the name field opens for editing.
Information panel	The information in the Information panel changes depending on what is selected in the Network Elements tree. • If a network element is selected that is not connected: The information panel shows the network element connection login information. Refer to Information displayed for unconnected elements (page 36). • If a network element is selected to which there is an Element Manager connection: The task panel opens and shows Configuration and Administration tabs. Information displayed for connected elements (page 37) for an example of the presentation of the information by Element Manager.
Status bar	The bottom bar of the Element Manager window displays the current status of the selected item.
Expansion Arrows	Clicking on these arrows will either expand or collapse the panels within the Element Manager window. These arrows appear on all panels that have sub-panels that can be expanded or collapsed.

Copyright © 2009 Nortel Networks

Information displayed for unconnected elements

When you select a device in the Network Element tree to which there is currently no active Element Manager connection, a panel is shown with a number of fields relevant to the selected device. Some of this information does not appear until you have successfully connected to the element with Element Manager.

Figure 3 shows the right-hand panel in Element Manager when an unconnected network element is selected.

The fields on this panel are described in Table 17.

Figure 2 Information display for unconnected network element

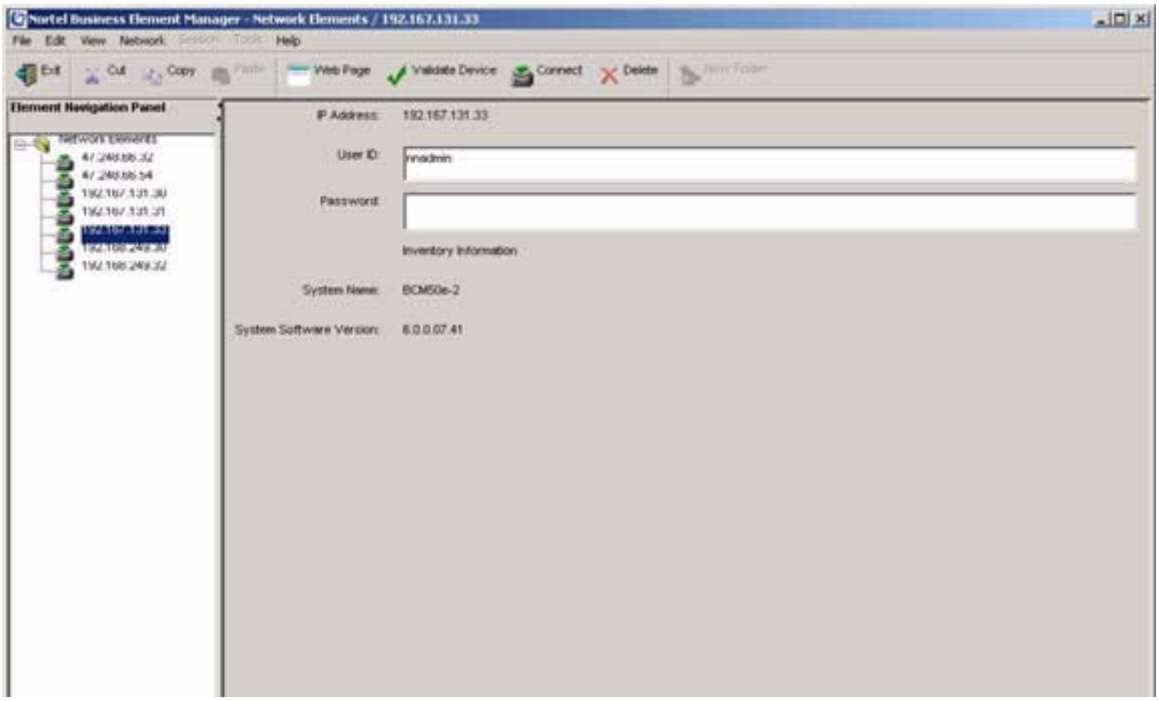


Table 3 Unconnected network element information

Field	Description
IP Address	The IP address of the selected device.
Read-Write Community String	The current community string for the selected device (shown if SNMP is enabled).
User Name	Name of an authorized BCM 5.0 user account.
Password	A valid password associated to the User Name.

Copyright © 2009 Nortel Networks

Information displayed for connected elements

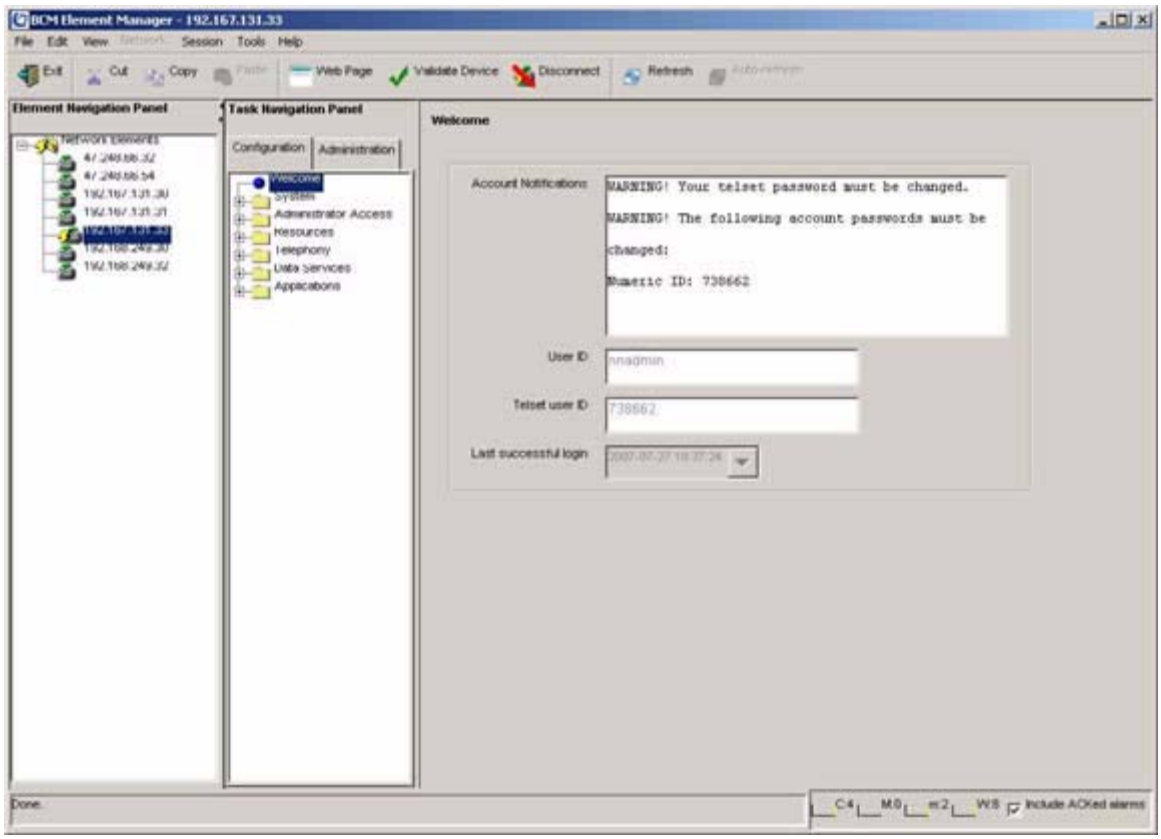
BCM Element Manager displays two panels to the right of the Network Elements navigation panel once a BCM 5.0 element has been connected:

- Task Navigation panel
- Information panel

Figure 4 shows the panels displayed in the Element Manager when it is connected to a BCM 5.0.

The Task Navigation panel contains the Configuration tab and the Administration tab. See Configuration task navigation panel details (page 37) for information contained in the Configuration navigation tree. Administration task navigation panel details (page 40) for information contained in the Administration navigation tree.

Figure 3 Element Manager window when connected to a BCM 5.0



Configuration task navigation panel details

The Configuration task navigation panel contains the Configuration task tree that allows you to set up and configure your BCM 5.0 and the attached devices.

Copyright © 2009 Nortel Networks

Table 18 lists the tasks in the Configuration task tree and describes the task functions available within the information panel when the task is selected.

Table 4 Configuration task navigation panel headings

Navigation tree heading	Description
Welcome	View information about the current user session, such as account notifications, user ID, and authentication method.
System	
Identification	View system information.
Date and Time	View and set current date and time including selection of time source.
Keycodes	Retrieve, view, and manage keycodes.
IP Subsystem	View information about the IP subsystem.
Administrator Access	
Accounts and Privileges	Manage users, groups, and privileges.
Security policies	Manage passwords and other security policies, including authentication methods.
SNMP	Manage SNMP settings, and trap destinations.
Resources	
Application Resources	Reserved resources as well as resources in use.
Media Gateways	Manage level of Echo cancellation and T.38 UDP redundancy for all media gateways.
Port Ranges	Add or delete Ports for IP Telephony.
Telephony Resources	Manage location, type and status of both physical and virtual modules including media gateways, IP trunks, and Sets.
Telephony	
Global Settings	
Feature Settings	Manage feature settings and timers.
Advanced Feature Settings	Manage SWCA, ONN Blocking, Silent Monitor and Call Log Space.
IP Terminal Features	Add or delete features and view List of Key Labels.
System Speed Dial	Manage speed dial numbers with bypass restrictions.
CAP Assignment	View Cap number and set DN.
Sets	
Active Sets	Manage line access, capabilities, preferences, and restrictions of set DNs

Copyright © 2009 Nortel Networks

Table 4 Configuration task navigation panel headings

Navigation tree heading	Description
Active Application DNs	Manage line access, capabilities, preferences, and restrictions of application DNs
Inactive DNs	Manage line access, capabilities, preferences, and restrictions of inactive DNs
All DNs	Manage line access, capabilities, preferences, and restrictions on all system DNs
Lines	
Active Physical Lines	Manage active physical line parameters
Active VoIP Lines	Manage active VoIP line parameters
Target Lines	Manage target line parameters
Inactive Lines	Manage inactive line parameters
All Lines	Manage all lines
Loops	View type, protocol, sampling, ONN blocking for BRI lines
Scheduled Services	Manage scheduled service and list of possible services
Dialing Plan	
General	Manage settings, access codes and direct dial sets
DNs	Manage DNs
Public Network	Manage settings, DN lengths, and carrier codes
Private Network	Manage settings, MCDN, VoIP IDs, ETSI
Line Pools	View pool and access code
Routing	Add or delete routes and destination codes
Ring Groups	Manage group membership and line settings.
Call Security	
Restriction Filters	Add or delete restrictions and exceptions for restrictions.
Remote Access Packages	Add or delete line pool access.
Class of Service	Manage passwords for class of service as well as restrictions.
Hospitality	Manage general administration, wake-up call settings, call restrictions, and room settings.
Hunt Groups	Manage group members and line assignment.
Call Detail Recording	Manage report options and data file transfer settings.
Data Services	
DHCP Server	Manage general DHCP server settings, IP ranges, and lease info.

Copyright © 2009 Nortel Networks

Table 4 Configuration task navigation panel headings

Navigation tree heading	Description
Router	Configure router settings.
Applications	
Voice Messaging/Contact Center	Record remote voice mail system access numbers or connect to local CallPilot applications. Launch CallPilot Manager.
Meet-Me Conferencing	Configure the Meet-Me Conferencing application and set class of service controls.
LAN CTE	Manage clients, add or delete privileges.
Music	Manage music settings.

Administration task navigation panel details

The Administration task navigation panel contains the Administration task tree that provides access to the BCM 5.0 that allows you to monitor and maintain your BCM 5.0.

Table 19 lists the tasks in the Administration task tree and describes the task functions available within the information panel when the task is selected.

Table 5 Administration task navigation panel headings

Navigation tree heading	Description
General	
Alarms	View alarm details, clear alarm log or reset LEDs
Alarm Settings	View alarm details and test alarms
SNMP Trap Destinations	Add, delete or modify trap destinations
Service Manager	Start, stop or restart Services (only use this feature when directed by Nortel Networks support, as improper use can affect system operation)
Hardware Inventory	Manage general information for attached BCM 5.0 systems and devices
System Metrics	
QoS Monitor	Manage Quality of Service monitor modes, logging and mean opinion scores
UPS Status	Manage uninterrupted power supply status, events and metrics
NTP Metrics	Manage network time protocol metrics synchronization details
Activity Reporter Basic	Enable the collection of data and set the collection time
Trunk Module Metrics	Run loopback test on trunk modules
CbC Limit Metrics	View (Call by Call) logs of denied calls

Copyright © 2009 Nortel Networks

Table 5 Administration task navigation panel headings

Navigation tree heading	Description
Hunt Group Metrics	Reset metrics by hunt group
PSTN Fallback Metrics	Reset PSTN fallback metrics
PVQM	View voice quality metrics.
Utilities	
BCM Monitor	Launch BCM Monitor
Ping	Send an ICMP packet to the selected switch to see if it is reachable on the network
Trace Route	Perform a trace route to specified IP address
Ethernet Activity	View Ethernet activity on ports
Reset	Perform a reboot of BCM 5.0 or either a warm or cold reset of telephony services or router
Diagnostic Settings	Set release reasons for ISDN or VoIP calls
Backup and Restore	
Backup	Perform immediate or scheduled backups
Restore	Restore Administration or Configuration settings
Logs	
Log Management	Perform immediate or scheduled log transfers. Types of logs are configuration change, security, alarm, system, and component diagnostic
Software Management	
Software Updates	Scheduled updates, cancel updates in progress or retrieve new updates
Software Update History	View details of software updates and remove updates
Software Inventory	View software details

Element Manager panels

The BCM Element Manager Configuration and Administration trees group the various tasks and functions required to configure the BCM 5.0 or perform administrative tasks. When either the Configuration tab or the Administration tab is selected, the associated task tree provides access to the information required to complete the tasks. For example, all tasks in the Configuration tab are configuration tasks, organized by workflow. Various types of administrative tasks are presented in the Administration tab, such as monitoring alarms or performing backups.

Some tasks have multiple tabs within the Information panel. Information on the panels may be grouped by related information or tasks.

Copyright © 2009 Nortel Networks

Repetitive information such as line programming, DN programming, and system speed dial is displayed in table format in the Element Manager. These tables allow you to change the data display, apply filtering, sort data, or copy information between cells. If there is additional information or configuration details available for a selected item in the table, an associated details panel for the selected row appears below the table.

In some cases, further panels can appear beside the main table. This is the case for restriction filters, for example, where there are three side-by-side panels that are programmed in a progressive order from left to right.

Tabs that do not apply to a selected item appear greyed out and behind the active tabs.

You can select fields that are not read-only and enter new data either from your keyboard or by using the drop-down box that appears when a field is selected. Data entered in these fields take immediate effect, unless otherwise noted on the panel or in pop-up confirmation dialog boxes.

Refer to Element Manager data features (page 43) for details about navigating and changing information.

Effective use of Element Manager

This section describes how Element Manager interacts with data to help the BCM 5.0 administrator better understand how to interact with the Element Manager.

The view users see depends on the group to which they belong. They may not be able to see all Element Manager trees or panels. Users assigned to the nnadmin group will have administrator privileges and can view all panels and trees available through Element Manager.

The BCM 5.0 retrieves task bullet data in real time and in sequential order. Once you select a task bullet, Element Manager searches for the data to populate the panels and any associated detail sub- panels or tables for the task. The first search must complete before Element Manager can start the search for the data required for the second selected task. The first task data request is not cancelled by the second task data request. You should only select a second task after the first task request is completed.

Although there is some data caching done, larger tables take longer to load, as do panels with more information in them.

Field data is committed by using add or modify buttons in panels that contain the buttons. For panels without a Commit button use the tab or space keys to leave the field after the data has been filled in to commit the data.

Copyright © 2009 Nortel Networks

Administrators have the ability to lock out other users for a maximum of 240 minutes from Element Manager by using the **Enable Exclusive Access** function in the **Administrator Access > Accounts and Privileges > Current Account** tab. This ensures that there are no other users creating changes at the same time as the administrator.

Element Manager data features

The Element Manager arranges repetitive information, such as lines programming, device record (DN record) programming, and system speed dials into tables of information. You can manipulate these tables in terms of data display and filtering, sorting and copying information between cells.

Other information that only requires one or two fields is arranged on composite panels that may have more than one sub-panel. Each sub-panel includes related information.

This section provides the following descriptions:

- Adding, deleting, and modifying table information (page 43)
- Copying table information (page 44)
- Rearranging columns (page 47)
- Using your keyboard to move around a table (page 49)

Adding, deleting, and modifying table information

Some tables automatically list all available records, such as the restriction filters. These are tables where the number of entries is restricted by the BCM 5.0. Other tables allow you to add or delete entries. These tables have an Add and Delete button under the table.

When you click the **Add** button, an add dialog box appears that allows you to enter basic information, such as a name or DN. When you click OK, the new listing appears on the table, with the default settings.

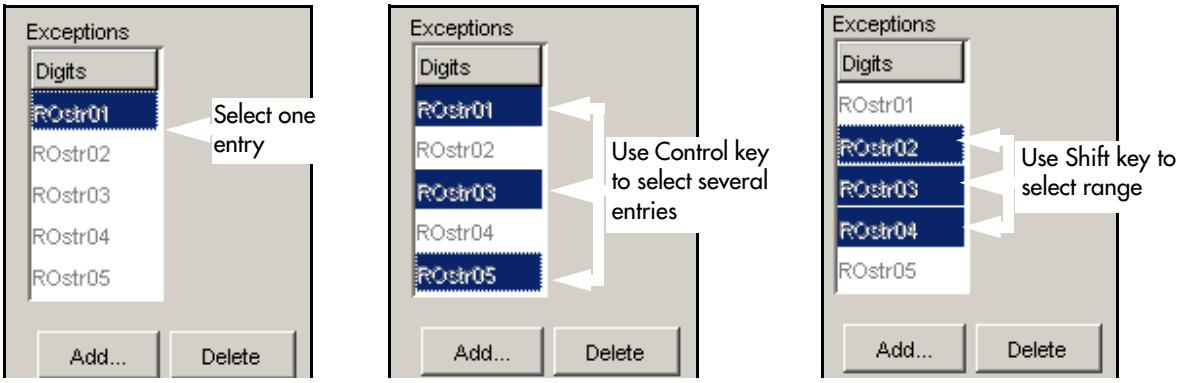
To modify table settings: click on the fields that you want to change and use the list to choose a new setting, or type in the setting. If information in the table is used by more than one panel, a Modify button may appear. Click on this button to bring up a dialog box where you can change information, as required.

To delete table settings: click on the row you want to delete from the table, then click the Delete button. You can select one line, or you can use the Shift or Ctrl buttons to delete a group of entries.

Figure 5 shows examples of how to select table entries for deletion.

Copyright © 2009 Nortel Networks

Figure 4 Deleting table entries



Copying table information

You can copy table information using the copy and paste method on tables that require a large amount of propagation of duplicate data. For example, tables within the Sets and Lines task tree items contain the copy and paste functionality.

Use the following steps to copy data within a table:

Step	Action
1	Select the row from table that you want to copy by clicking on it.
2	Press the **Copy** button.
3	Select the row or rows to which you want to paste the information. You can select multiple rows to paste data in by pressing either the Shift or Ctrl key.
4	Press the **Paste** button. Either the Paste Set Data or the Paste Line Data dialog box appears depending on whether you are copying data within the **Sets** or **Lines** task tree items. The check boxes within these dialog boxes change depending on the data selected to copy. Table 20 shows the possible check boxes that can appear and what type of data will be copied when they are selected.
5	**Check** the check boxes for the types of data that you would like to copy to the selected rows.
6	Select **OK** to paste the information. The rows are updated with copied data.

--End--

Copyright © 2009 Nortel Networks

Table 6 Paste Data

Check box title	Settings copied	Settings not copied
Control set (Lines, Sets)	• Control set from the copied source into the selected row	
Restrictions (Lines, Sets)	• Set restrictions • Set lock • Allow Last Number Redial • Allow Saved Number Redial • Allow Link • Line/set restrictions	• Direct-dial set designation (which set is the D-Dial set) • CAP/TAP assignment • ExtraDial set designation • Service mode ringing set designation • Prime set designation for a line • Hunt group appearance
Trunk Data (Lines, Sets)	• Data in common between the copied and pasted trunks.	• Data can be copied between two different trunk cartridge types
Telco data (Lines, Sets)	• Call Log set (Logging set) • 1stDisplay	• Log password • Log space
Buttons (Sets)	• All programmable set buttons from the copied set into the selected row's programmable buttons.	
Line access (Sets)	• Line assignment • Line pool access • Prime line designation • Number of intercom keys • Answer DNs (unless Answer button DN is same as telephone to which is being copied)	• Private line appearances

Copyright © 2009 Nortel Networks

Table 6 Paste Data

Check box title	Settings copied	Settings not copied
Capabilities (Sets)	• Call Forward No Answer (DN + delay + setting) • Call Forward Busy (DN +setting) • DND on busy • Handsfree setting • Handsfree answerback • Pickup group • Paging zone • Paging • Direct-dial (which set is reached by the D-Dial digit) • Priority calling • Hotline • Auxiliary ringer • Allow redirect • Redirect ring • ATA settings (except Use ringback setting)	• Set name • Use ringback setting under ATA settings • SM Supervisor
User Preferences (Sets)	• Language choice • Ring type • Calls log options (Auto logging) • Display contrast • Dialing options (automatic, pre-dial, standard)	• External autodial button assignments • Internal autodial button assignments • Programmable button assignments • Ring volume • User speed dial • CAP/KIM module memory button

Rearranging table information

There are two ways of changing table information layout:

- Rearranging columns (page 47)
- Rearranging lines (page 47)

Copyright © 2009 Nortel Networks

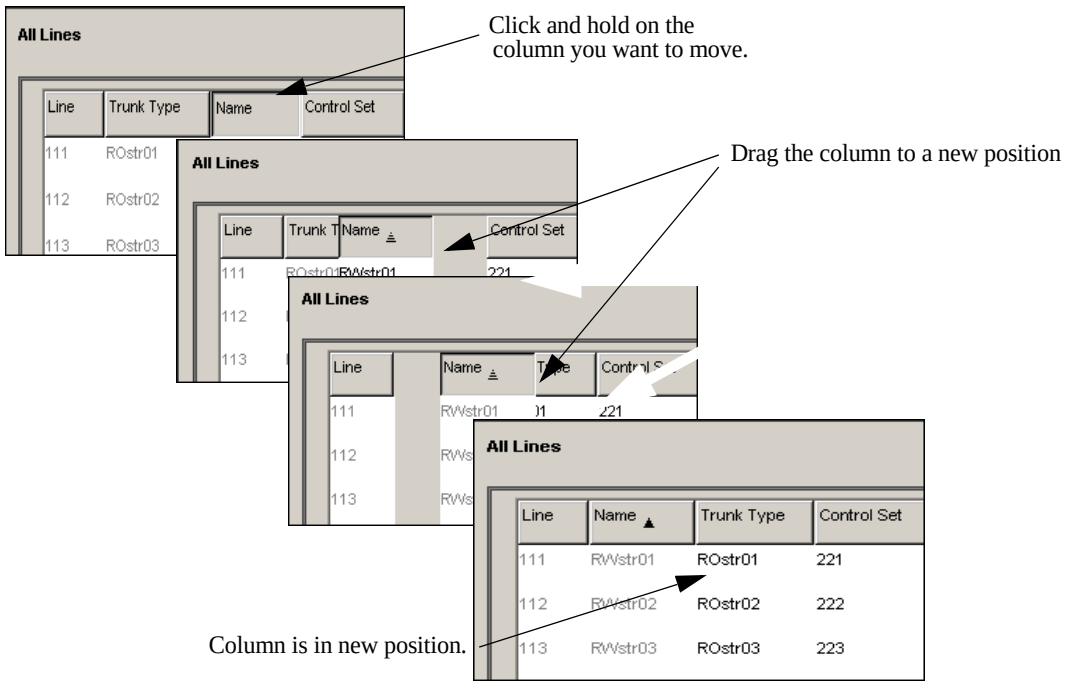
Rearranging columns

You can move columns in a table if you want to temporarily display information in a different way. Changes to the table layouts are not saved. If you leave the panel, the columns return to the default order.

To move a column, click and hold the column heading and drag and drop it to another location on the table.

Figure 6 shows a step-by-step example of how to move a column within a table.

Figure 5 Changing the order of columns in a table



Rearranging lines

If you want to sort table data to make it easier to find information, use the right-click function on table column headings to open a Sort dialog box. The Sort dialog box allows you to choose how a table sorts lines of data.

Figure 7 shows the Sort dialog box.

Table 21 lists and describes the fields and buttons in the Sort dialog box.

Copyright © 2009 Nortel Networks

Figure 6 Sort dialog box

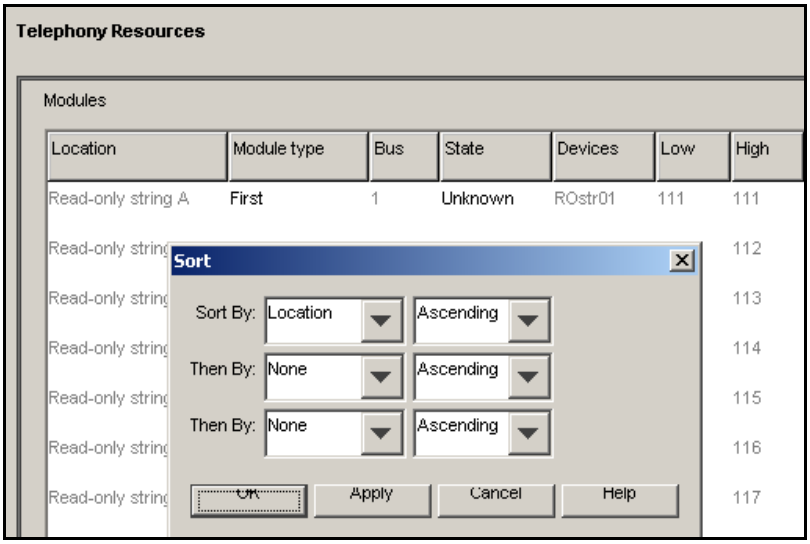


Table 7 Sort dialog box fields

Attribute	Value	Description
Sort By	<column name> Ascending/ descending	Choose the column to uses for sorting table data. This is the first column the data set is sorted by.
Then By	None, <column name> Ascending/descending	Choose the column to uses for sorting table data. This is the second column the data set is sorted by.
Then By	None, <column name> Ascending/descending	Choose the column to uses for sorting table data. This is the third column the data set is sorted by.

Table 8 Sort dialog box buttons

Actions	Description
OK	Changes are accepted and the dialog box closes.
Apply	The table rearranges, based on the selections, but the dialog box does not close.
Cancel	No changes are made to the sort order.
Help	Help link to this page.

Copyright © 2009 Nortel Networks

Using your keyboard to move around a table

Use the <Tab> key or the directional arrow keys on your keyboard to move around a table.

<Tab>	Each press moves the cursor to the field to the right. At the end of a line, the next line is highlighted and the cursor continues moving to the right.
<Shift><Tab>	Each press moves the cursor to the field to the left. At the beginning of a line, the previous line is highlighted and the cursor continues moving to the left from the far-right field.
<Up><Down>	Navigation tree: Moves cursor up/down one heading.
	Non-table panels: Moves cursor up/down one heading.
	Selected table: moves up/down one line.
<Left><Right>	Moves cursor to the left/right of the cell. Note that this only works on the currently-selected line.
<Shift><Enter>	Moves forward through the list.
<Carriage Return>	Selected field: brings up the drop-down box icon or the rotary list icon.
	Check box: selects or clears the check box.

Saving programming records

You can create a programming file that contains the current settings of all or part of your Element Manager data. These files can be saved in either HTML or Excel spreadsheet format. You can access the programming record in the same way you access any other HTML file or by using Excel, version 2002 or later, for the spreadsheet format.

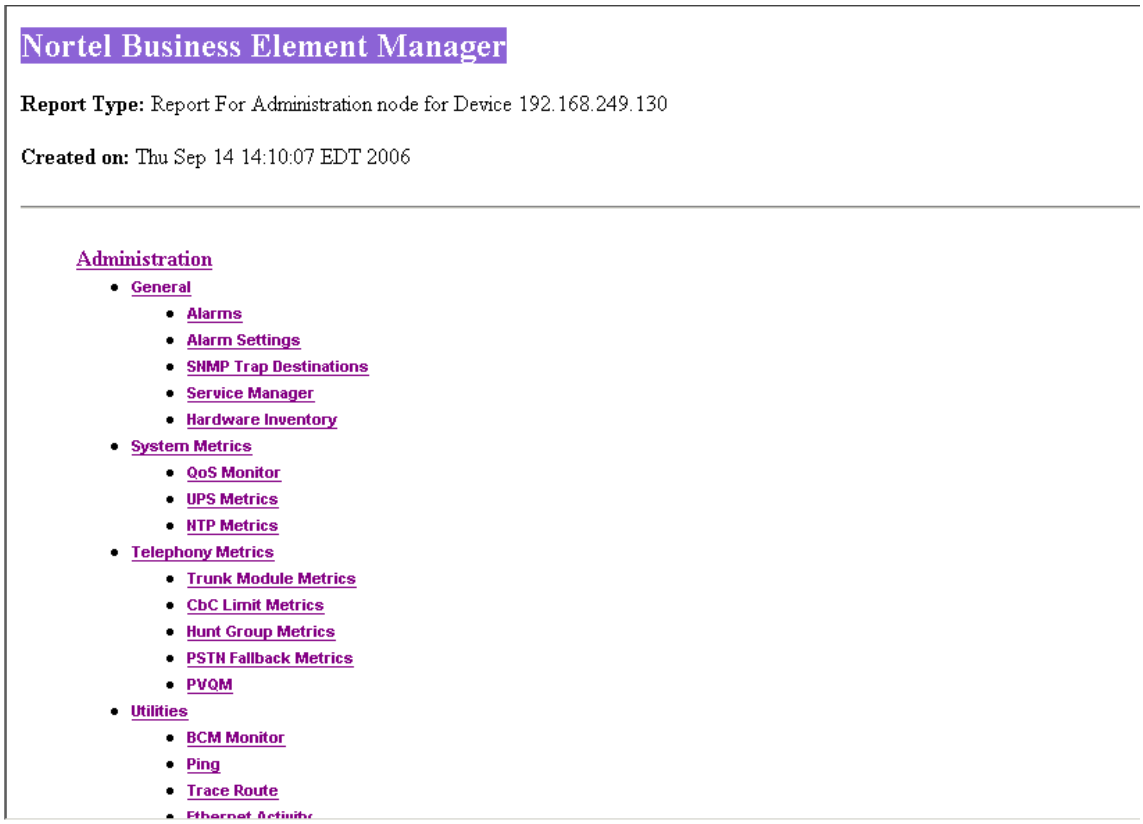
A programming record that contains the factory default settings is available in Excel format from the BCM web page.

Attention: It may take several hours to save programming records, depending on the size of the system. Nortel recommends that you saving programming records during periods of low system use.

Figure 8 shows an example of a programming record saved in HTML format and Figure 9 shows an example of a programming record saved in Excel spreadsheet format.

Copyright © 2009 Nortel Networks

Figure 7 Programming record in HTML format



Nortel Business Element Manager

Report Type: Report For Administration node for Device 192.168.249.130

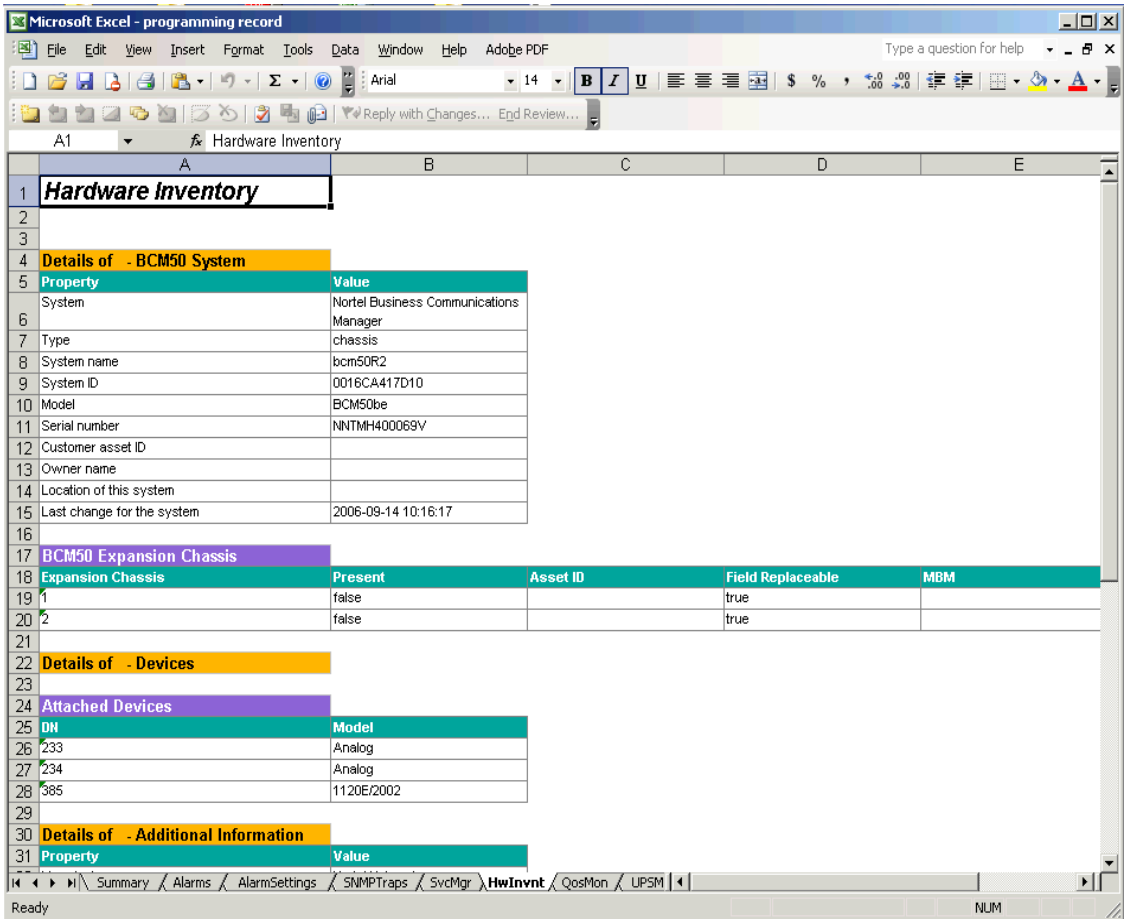
Created on: Thu Sep 14 14:10:07 EDT 2006

Administration

- General
  - Alarms
  - Alarm Settings
  - SNMP Trap Destinations
  - Service Manager
  - Hardware Inventory
- System Metrics
  - QoS Monitor
  - UPS Metrics
  - NTP Metrics
- Telephony Metrics
  - Trunk Module Metrics
  - CbC Limit Metrics
  - Hunt Group Metrics
  - PSTN Fallback Metrics
  - PVQM
- Utilities
  - BCM Monitor
  - Ping
  - Trace Route
  - Ethernet Activity

Copyright © 2009 Nortel Networks

Figure 8 Programming record in an Excel spreadsheet



Microsoft Excel - programming record

	A	B	C	D	E
1	Hardware Inventory				
2					
3					
4	Details of - BCM50 System				
5	Property	Value			
6	System	Nortel Business Communications Manager			
7	Type	chassis			
8	System name	bcm50R2			
9	System ID	0016CA417D10			
10	Model	BCM50be			
11	Serial number	NNTMH400069V			
12	Customer asset ID				
13	Owner name				
14	Location of this system				
15	Last change for the system	2006-09-14 10:16:17			
16					
17	BCM50 Expansion Chassis				
18	Expansion Chassis	Present	Asset ID	Field Replaceable	MBM
19	1	false		true	
20	2	false		true	
21					
22	Details of - Devices				
23					
24	Attached Devices				
25	DN	Model			
26	233	Analog			
27	234	Analog			
28	385	1120E/2002			
29					
30	Details of - Additional Information				
31	Property	Value			

Summary | Alarms | AlarmSettings | SNMPTraps | SvcMgr | HwInvnt | QosMon | UPSM

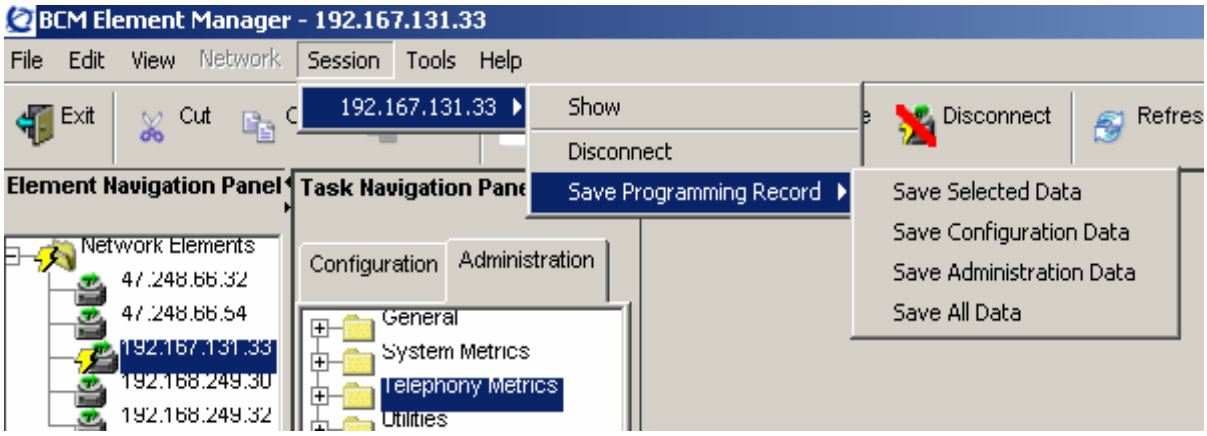
Ready NUM

To create this file, you use the **Save Programming Record** command on the Session menu. The Save Programming Record provides four menu options.

Figure 10 shows the menu options available.

Copyright © 2009 Nortel Networks

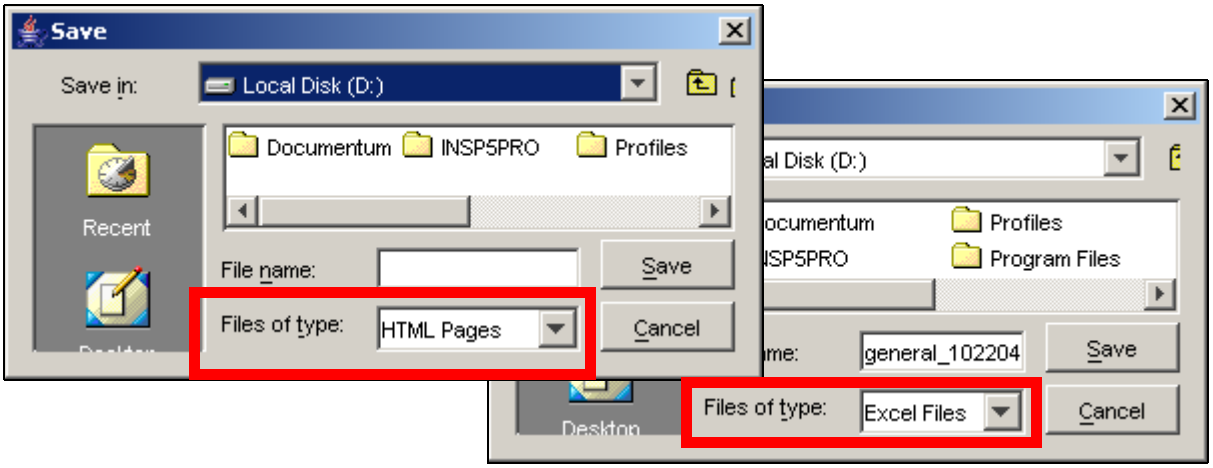
Figure 9 Session selections for saving programming records



Use the following steps to save the data programming:

Step	Action
1	Select the item on the task navigation panel for which you want to save the data into an HTML report or Excel workbook. An item can be a task item, task bullet, or a folder.
2	Click on **Session > device IP address > Save Programming Record > Save Selected Data.** A Save dialog box appears.

Figure 10 Save dialog box



3 In the **Save**: field choose the path where you want the file stored.

Copyright © 2009 Nortel Networks

4 In the **Files of type**: field, choose the format in which you want to save the data (HTML or Microsoft Excel spreadsheet).

5 Enter a File name. Nortel recommends that you make the current date and system name part of the file name.

6 Click on **Save**.

Attention: The Save All Data selection can take up to 45 minutes to complete. Your computer must stay connected to the element during this time, as the Save All Data function is actively writing into the file specified until the function is complete.

--End--

Element Manager application logging

This section describes the logging performed by Element Manager to generate a record of its tasks. There is usually no need to monitor Element Manager log activities. However, the log files are available for troubleshooting should issues arise within the Element Manager operations.

When you select File > View Network Element Logs, you are prompted to open a log file in the Log Browser. You can use the Log Browser to sort the events in the Application Log.

The BCM Element Manager Logs panel has three parts:

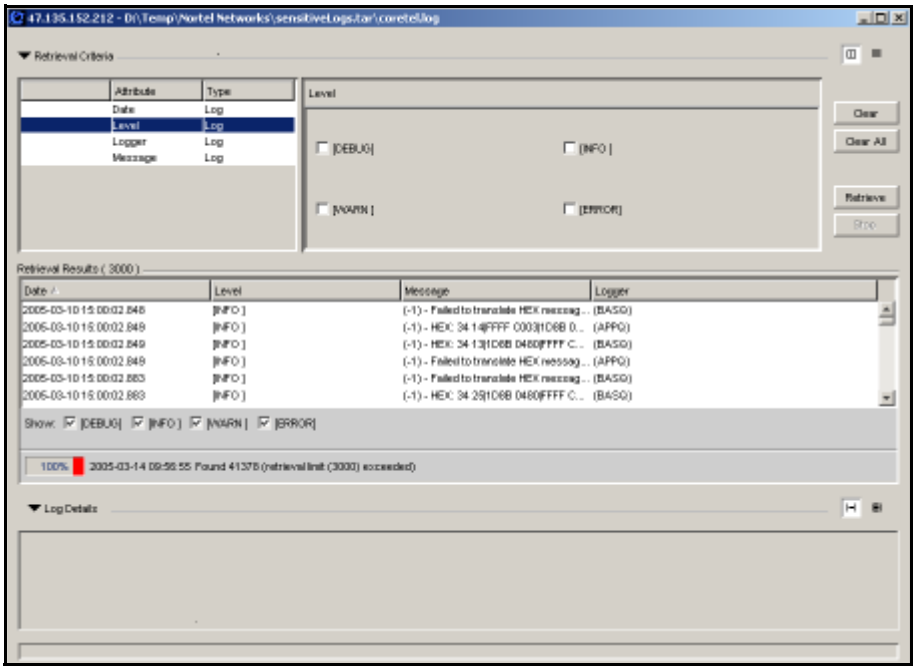
- Retrieval Criteria - This panel allows you to specify logging criteria, to clear the defined parameters of a selected criteria, clear all retrieval criteria, retrieve logs based on the specified criteria, or stop logging.
- Retrieval Results - This panel allows you to filter the results shown by retrieving logs based on selected severity level check boxes.
- Log Details - shows the details of the logged message.

You can show or hide the retrieval criteria and log detail panels by clicking on the expansion arrow beside the panel heading.

See Figure 12 for the Application log panel.

Copyright © 2009 Nortel Networks

Figure 11 Application log panel



BCM 5.0 integrated launch of related applications

BCM 5.0 Voicemail and CallCenter applications are managed by CallPilot Manager, and real-time system activity is monitored with the BCM Monitor. All of these applications can be launched through buttons provided at an appropriate location in the Element Manager. You can specify whether you want to pass logon credentials to applications launched from the Element Manager under **View > Preferences > Tool Launch**. When you pass logon credentials to these applications, you do not need to re-enter your password when the BCM Element Manager launches them. These applications also have application-based Help systems.

You can launch CallPilot Manager by clicking by the **Launch CallPilot Manager** button under **Configuration Task > Applications > Voice Messaging/Contact Center.**

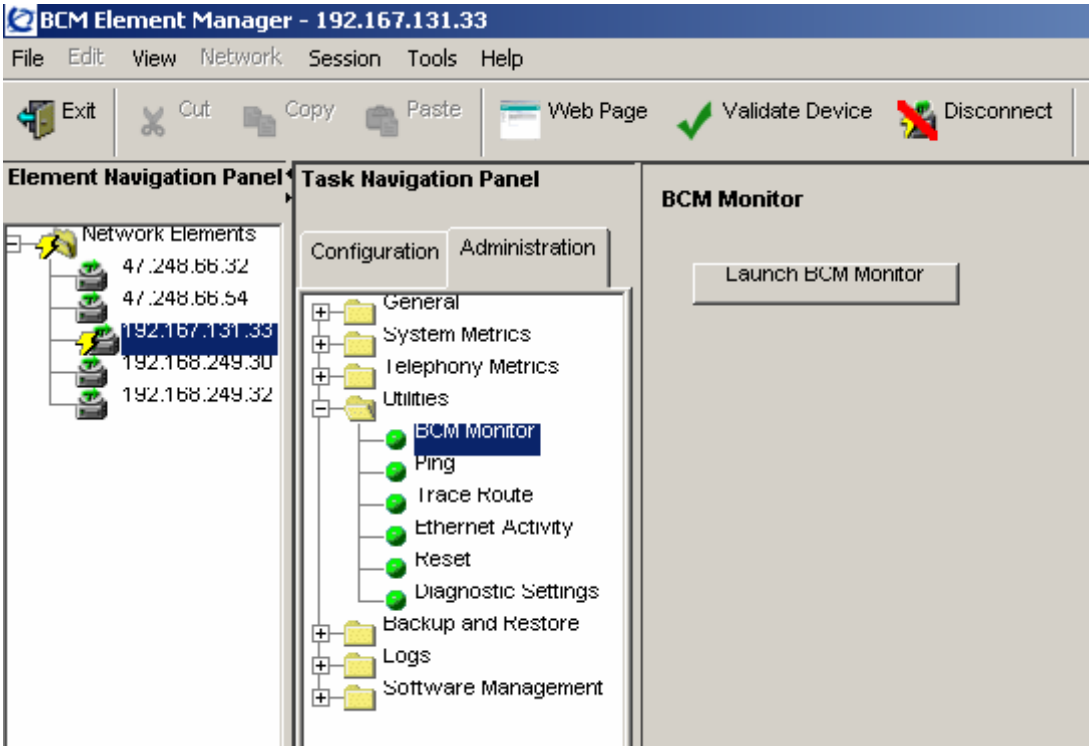
The **Launch CallPilot Manager** button is only visible in Element Manager to groups with the CallCenter privilege assigned to them.

You can access the BCM Monitor through the **Launch BCM Monitor** button under **Administration Task > Utilities > BCM Monitor,** or you can choose **Tools > BCM Monitor**.

Figure 13 shows the location of the **Launch BCM Monitor** button.

Copyright © 2009 Nortel Networks

Figure 12 Launch BCM Monitor button



BCM 5.0 feature licensing

You require a keycode to enable software features on the BCM. The keycode is a 24-digit code that authenticates the feature or bundle of features you purchased for your BCM 5.0.

To obtain and load a keycode you require the following:

- authorization code for the desired feature to demonstrate proof of ownership
- system ID of the system to which you want to apply the new feature

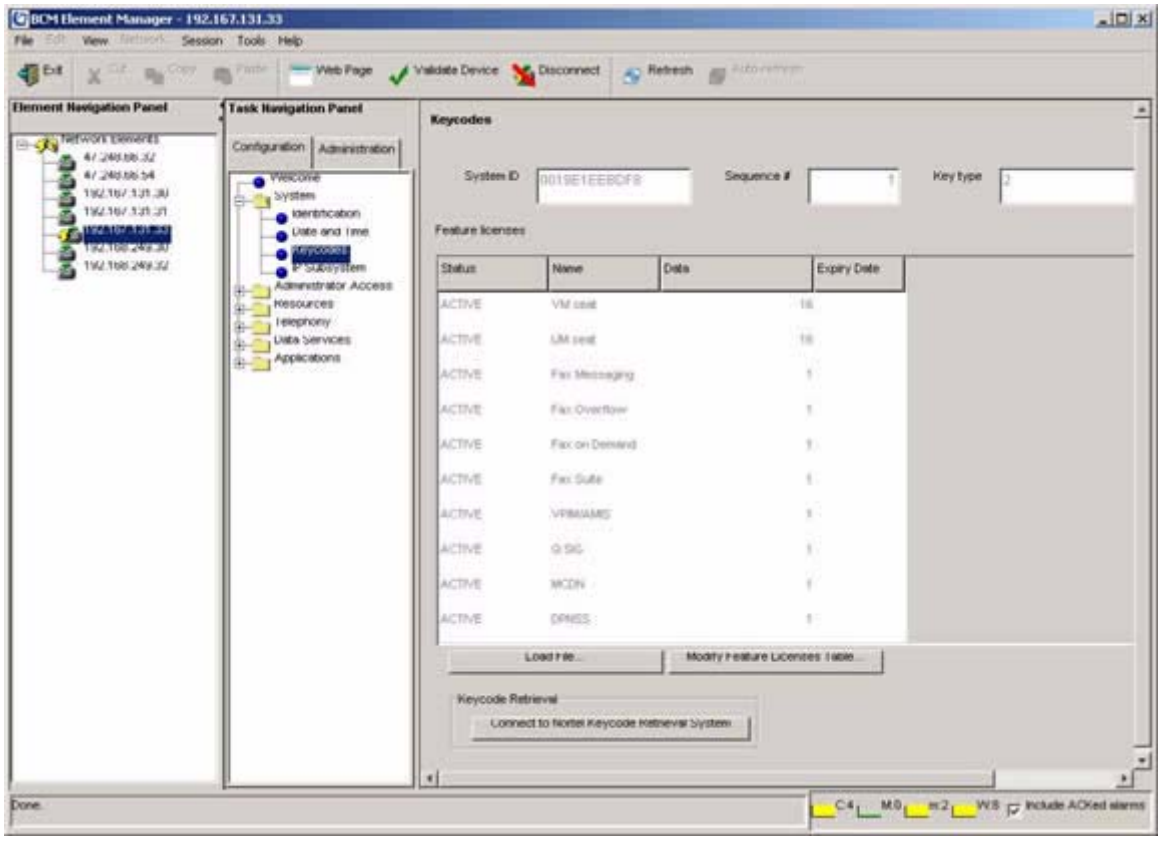
The authorization code is a six-digit code you receive for each of the features you purchase. The authorization code can be found on the label affixed to the “Keycode information sheet” on the last page of the Keycode Installation Guide (NN40010-301).

Figure 14 shows the Element Manager keycode panel. See the Keycode Install Guide (NN40010-301) for details on BCM 5.0 keycodes.

Copyright © 2009 Nortel Networks

Attention: You receive one keycode whether you purchase one feature or a bundle of features. You receive an authorization code for each feature you purchase. For example, if you have one feature, you receive one authorization code and one keycode. If you purchase four features, you receive four authorization codes and one keycode.

Figure 13 BCM keycode panel



BCM 5.0 Help system

The following types of help information are available to you in Element Manager to help you understand how to program your BCM 5.0:

- Menu bar Help (page 57)
- Field-level Help (page 57)
- Context-sensitive Help (page 58)

Copyright © 2009 Nortel Networks

Menu bar Help

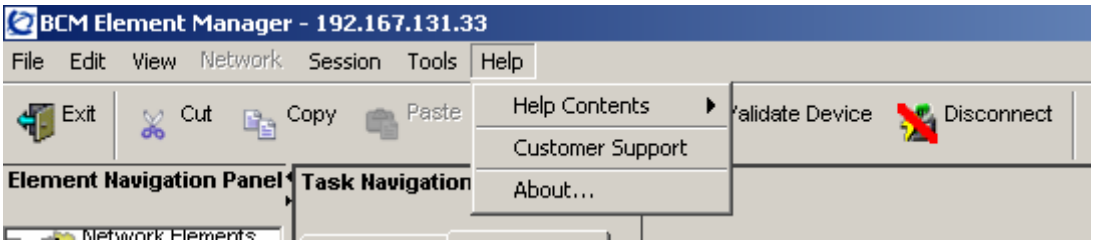
The menu bar help provides access to the entire Help system, which includes online help and user manuals in PDF. Table 23 shows the help elements available from menu bar Help.

Figure 15 shows the pull-down menu from the Help on the menu bar.

Table 9 Element Manager help elements

Help menu option	Description
Contents	Opens a browser window that shows the help information by contents or index and allows a search.
Customer Support	Opens a browser to a Nortel Networks customer support web site
About	Provides information about the Element Manager software, such as the build number.

Figure 14 BCM 5.0 Element Manager menu bar help



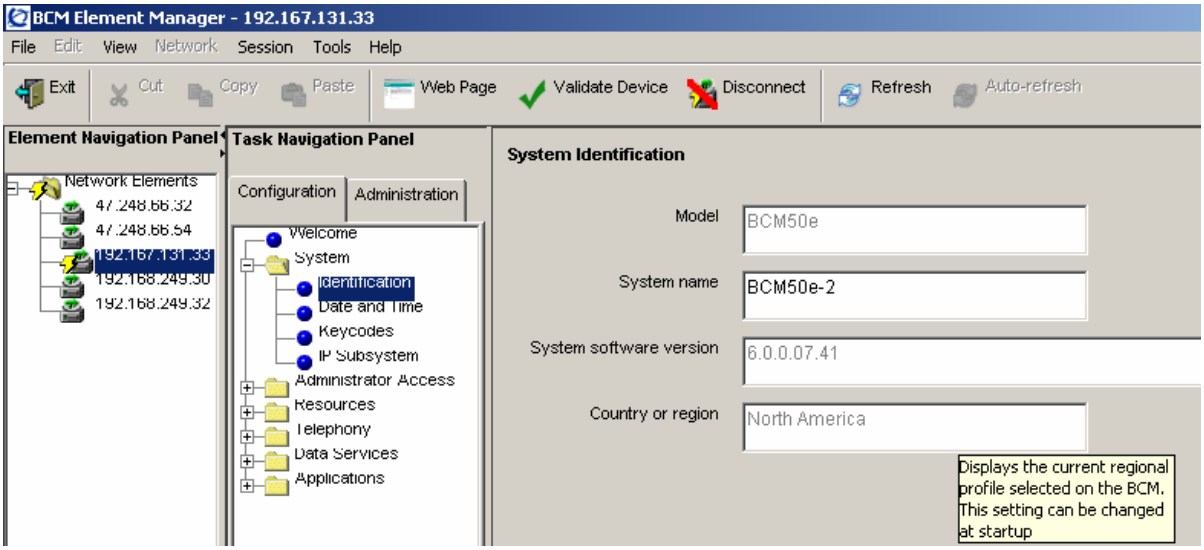
Field-level Help

When you position the cursor over a field, a pop-up box provides a brief description of the information required in the field.

Figure 16 shows an example of a field-level help pop-up box.

Copyright © 2009 Nortel Networks

Figure 15 Field-level Help



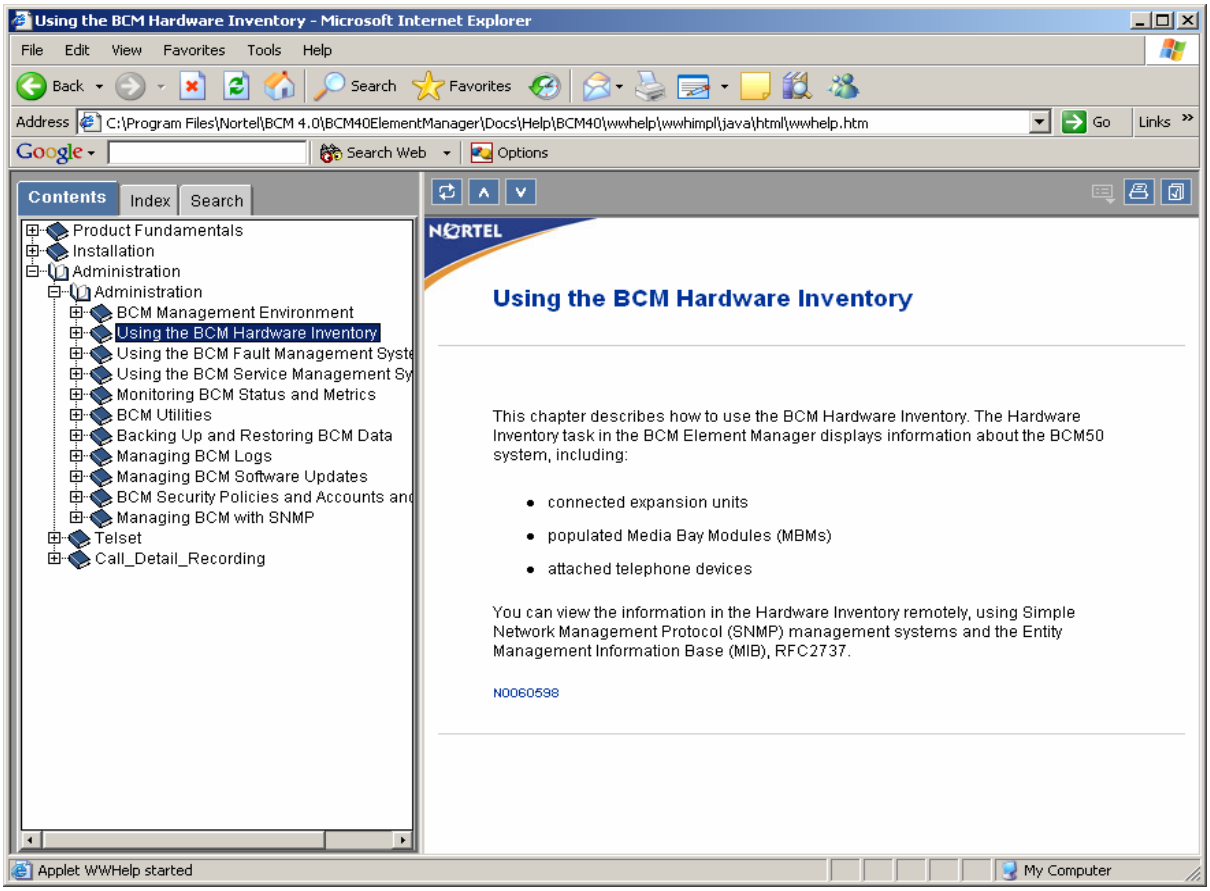
Context-sensitive Help

You can view context-sensitive Help by clicking on a navigation tree heading, tab heading, or field heading of a connected BCM 5.0 device and pressing the F1 function key. This help opens an HTML page containing overview information or panel descriptions specific to the selected heading. Once the HTML help module opens, it also provide links to tasks and other features related to the panel function.

Figure 17 shows the HTML page opened when context-sensitive help is selected.

Copyright © 2009 Nortel Networks

Figure 16 Context-sensitive HTML page


Using the BCM Hardware Inventory - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address C:\Program Files\Nortel\BCM 4.0\BCM40ElementManager\Docs\Help\BCM40\wwhelp\wwhimpl\java\html\wwhelp.htm
Go Links
Google Search Web Options
Contents Index Search
Product Fundamentals
Installation
Administration
Administration
BCM Management Environment
Using the BCM Hardware Inventory
Using the BCM Fault Management Syste
Using the BCM Service Management Sy
Monitoring BCM Status and Metrics
BCM Utilities
Backing Up and Restoring BCM Data
Managing BCM Logs
Managing BCM Software Updates
BCM Security Policies and Accounts and
Managing BCM with SNMP
Telset
Call_Detail_Recording
NORTEL
Using the BCM Hardware Inventory
This chapter describes how to use the BCM Hardware Inventory. The Hardware Inventory task in the BCM Element Manager displays information about the BCM50 system, including:
connected expansion units
populated Media Bay Modules (MBMs)
attached telephone devices
You can view the information in the Hardware Inventory remotely, using Simple Network Management Protocol (SNMP) management systems and the Entity Management Information Base (MIB), RFC2737.
N0060598
Applet WWHelp started
My Computer

BCM 5.0 common file input/output processes

Many BCM 5.0 tasks require task data to be transferred, to or retrieved from, different destinations or sources. BCM 5.0 can use the following data repositories when transferring or retrieving task data:

- BCM 5.0
- personal computer
- network folder
- FTP server
- SFTP server
- USB storage device
- HTTP/HTTPS server

Copyright © 2009 Nortel Networks

Table 24 shows the data repositories that can be used for transferring task data to or from your BCM 5.0 device during a task that requires data input or output.

Table 10 Task data source and destination repositories

Task Data Repository	Backup and Restore	Logs	Software Updates	Keycodes
BCM 5.0	Y	N	N	N
Personal computer	Y*	Y*	Y	Y
Network folder	Y	Y	Y	Y
FTP	Y	Y	Y	N
SFTP	Y	Y	N	N
USB storage device	Y	Y	Y	N
HTTP/HTTPS Server	N	N	Y	N

* Available only for On Demand request of a task; not available for tasks to be run at a later time.

Comparison of data repositories

Each data repository has its advantages and disadvantages. Use this table to determine which data repository solution matches your priorities. For example, if security is a primary concern for you, consider setting up an SFTP or HTTPS server. If you are looking for a data repository solution that is easy to implement, the BCM 5.0, a personal computer, and a USB drive are all relatively easy to set up.

Table 11 Comparison of data repository solutions

Task Data Repository	Ease of use	Speed	Security
BCM 5.0	H	N	M
Personal computer	H	Y*	M
Network folder	M	Y	M
USB	H		L
FTP	M	Y	L

Copyright © 2009 Nortel Networks

Table 11 Comparison of data repository solutions

Task Data Repository	Ease of use	Speed	Security
SFTP	L	Y	H
HTTP/HTTPS	L	M	L/H

The following sections contain information to help you choose the best data repository solution for your environment and provide tips for implementation.

The BCM 5.0

Storing information on the BCM 5.0 is quick and easy, but does not protect your data in the event of damage to the BCM 5.0. It makes an ideal solution in small environments where the BCM 5.0 is the only computer on site, and where no network resources are available.

Personal computer

Storing information on a personal computer is a safe option either for short-term storage, or for environments where only one computer is used to access Element Manager. The speed of transferring information to or from a personal computer is based on the speed of the network. Similarly, the security of the transfer is based on the security of the network. While this is a good solution for on-demand transfers, it is not an option for scheduled tasks.

Network folder

A network folder is the only solution that covers backups, logs, software updates, and keycodes. You must make sure that the folder is set up as a shared Windows resource and the BCM 5.0 is properly configured to have write access to the network folder. For information on setting up a network folder, contact your network administrator. Saving information to a network folder can take a significant amount of time. The speed and security of the transfer are based on the speed and security of the network.

Table 12 Configure Network Folder attributes

Attribute	Action
Network Folder	Enter the hostname or IP address of the network folder.
User Name	Enter the user name associated with the network folder.
Password	Enter the password associated with the network folder.
Directory	Enter the path to the subdirectory, as applicable.

Copyright © 2009 Nortel Networks

FTP servers

Storing information on an FTP server is similar to storing information in a network folder. It offers a centrally accessible way to store BCM 5.0 data. The speed of transferring to an FTP server is based on the speed of your network. Transfers to an FTP server generally have a low level of security, unless the transfer is set up to run through a VPN.

Table 27 provides information required to use an FTP server.

Table 13 Configure FTP server attributes

Attribute	Action
FTP or server	Enter the hostname or IP address of the FTP server.
User Name	Enter the user name associated with the FTP server.
Password	Enter the password associated with the FTP server.
Directory	Enter the path to the subdirectory, as applicable.

SFTP servers

The process of using an SFTP server is similar to the process for using an FTP server. However, an SFTP server has a greater level of security than an FTP server, and more credentials are required to use an SFTP server. You must set up and manage security keys and certificates, including generating a SSH key, which you must then install on the SFTP server.

Table 28 provides information required to use an SFTP folder.

Table 14 Configure FTP or SFTP Server attributes

Attribute	Action
FTP or SFTP Server	Enter the hostname or IP address of the SFTP server.
User Name	Enter the user name associated with the SFTP server.
Password	Enter the password associated with the SFTP server.
Directory	Enter the path to the subdirectory, as applicable.

USB storage device

Storing information to a USB storage device is a very quick way of saving information, as the transfers occur much more quickly than network or FTP transfers, depending on the speed of the USB drive. The USB storage device must be connected to the BCM 5.0. The backup and log information can be saved only to the top level of the USB storage drive file hierarchy. Transfers from the BCM 5.0 to a USB storage device are relatively secure, but a USB

Copyright © 2009 Nortel Networks

storage device is small and can be stolen easily if it is not in a secure location. The USB storage device must be formatted as a FAT32 drive. The following USB storage devices have been tested and are supported:

- SanDisk 512 MB Cruzer Mini USB 2.0 Flash Drive
- SanDisk 256 MB Cruzer Mini USB 2.0 Flash Drive
- Lexar 512 MB Jumpdrive Sport 2.0/Rubber C
- Kingston 256 MB 2.0 DataTraveler Memory (DataTraveler PLUS)
- Kingston DataTraveler USB FlashDrive 256 (DataTraveler ELITE)
- Apacer 256 MB USB 2.0 HT202 Handy Drive

If your USB storage device is not on this list and you are encountering problems transferring information to or from the BCM 5.0 device, Nortel recommends using one of the devices listed here.

HTTP/HTTPS server

HTTP and HTTPS servers are available as an option only for software updates. It can be a good solution if you have many BCMs that require software updates from a centralized location. See Table 29 for the information required to use an HTTP or HTTPS server.

Table 15 Configure HTTP or HTTPS server attributes

Attribute	Action
HTTP Server	Enter the hostname or IP address of the HTTP server.
User Name	Enter the user name associated with the HTTP server.
Password	Enter the password associated with the HTTP server.
Directory	Enter the path to the subdirectory, as applicable.
Use HTTPS	Specify whether the server requires SSL

Copyright © 2009 Nortel Networks

Security fundamentals

The information in this chapter applies to both the BCM50 and the BCM450 platforms running BCM 5.0.

This chapter provides an overview of the BCM 5.0 security policies, and outlines considerations that network administrators must take into account when they configure security policies.

The Security Policies panel allows you to establish system-wide security policies. This chapter describes the security policies that you can configure through the Element Manager.

Navigation

- System security considerations (page 64)
- Secure protocols and encryption (page 66)
- Security audits (page 66)
- Site authentication (page 67)
- Security certificate (page 68)
- User account and group management (page 73)
- Accounts and Privileges (page 90)

System security considerations

To define security parameters for users and the system, you must consider the level of security required to meet your network security standard. Note that the default security settings are not assigned to their maximum secure settings and you can change them to suit your specific requirements. If you change the default settings, ensure that you understand the interoperability implications between your system and client applications, the computer you use to access the system, and network impacts.

Attention: Nortel recommends that you change all default system passwords after you verify system operation.

Copyright © 2009 Nortel Networks

Consider the following questions when you design the security parameters for your system:

- Do you want administrative users to access the system through the Telset configuration menus?
- How much access to the Element Manager interface should you allow users?

  Access is based on user privileges defined through user group membership. One default Element Manager administrator account (nnadmin) exists. This account includes a default Telset user ID and password. A read-only guest default account (nnguest) exists, which does not have a default Telset user ID and password. You can delete the guest account to increase security.
- Do you require a temporary account that expires?
- If the Element Manager receives no input from the user, how long do you want it to remain open?
- How long do you want a user account to remain locked out after a user enters specified number of incorrect passwords?
- How complex do you want user IDs and passwords in terms of length and character requirements?
- Do you want to use secure web access to Element Manager through Secure Sockets Layer (SSL). SSL encryption does not secure the Configuration Menu.
- Do you want modem access to use callbacks?
- Do you require the added security of a private SSL certificate?
- Do you want to turn on the modem remotely?

Attention: Restrict core system configuration, such as resources and network management to an administrator-level account. Use the group profiles to define levels of users with access to the headings specific to their task. This also helps to prevent overlap programming if more than one person uses the interface at the same time.

Restrict the Dial-in access user group to users who require this interface. If users do not require modem access, disable the modem interface to provide further security.

Copyright © 2009 Nortel Networks

Secure protocols and encryption

The BCM 5.0 uses the following network protocols for Operation, Administration, and Maintenance (OAM) in a secured mode:

- CIM/XML is the main management protocol used by the BCM 5.0 and is only available through an authenticated and authorized SSL connection. You can control user access based on assigned privilege levels.
- Multiple data transfer protocols are supported for the various applications including, SCP, SAMBA, and FTP.
- SSH is used by customer support personnel for troubleshooting purposes only. There are special authentication parameters for this interface.

Security audits

The system creates a security log file at system startup to record user logins and transactions. This log accumulates each day until it reaches the maximum log size, and the system deletes the oldest record to make room for the newest record. For information about managing logs, see Data backup and restore (page 160).

Administrators can view security logs using Log Management capabilities found on the Administration tab in Element Manager.

Each security log record contains

- the time of the event
- the user ID
- a summary of the action performed in the configchange.systemlog

Firewalls

Secured communications over a WAN require firewall protection. Depending on the hardware being used and the type of security being employed, specific firewall rules must be set to enable communication between the BCM50/450 models and the Element Manager.

If the firewall is enabled, add the following rule:

- Source address: Element Manager IP address or “Any.” This is the IP address of the system that the Element Manager resides on.
- Destination address: BCM LAN IP address.
- Service type: TCP:5989, 443 and 80 (port number for CIM/XML, https, and http).
- Action: forward.

You must configure these services for NAT: OpenWbem, HTTPs, HTTP, and CIM/XML.

Copyright © 2009 Nortel Networks

Configure them using the following rules:

Table 16 Firewall configuration rules

Rule	Services			
Name	OpenWbem	HTTP	HTTPS	CIM/XML
Start Port	5989	80	443	5989
End Port	5989	80	443	5989
Server IP Address	BCM50 LAN IP address	BCM50 LAN IP address	BCM50 LAN IP address	BCM50 LAN IP address

Site authentication

The generic SSL certificate does not provide site authentication; a recognized signing authority does not sign the generic SSL certificate.

You can upgrade the SSL certificate used by the http server to a private SSL certificate, which offers site certification and encryption. Site authentication requires system-specific information, for example, an IP address, or a company name. A site-specific certificate ensures that when users point their web browser at the SSL web interface, the system does not ask users to accept the certificate.

If you use the default BCM 5.0 generic SSL certificate, the system prompts the user to accept an unsigned certificate.

Copyright © 2009 Nortel Networks

Security certificate

The BCM 5.0 includes a generic SSL security certificate. The self-signed certificate enables SSL encryption functionality, and provides the necessary encryption keys.

A facility also exists to generate SSH certificates, required in the set up of an SSH server if you use Secure Copy (SCP) as a transfer method.

BCM 5.0 SSL certificate properties

When you first log on to the Element Manager, a security alert appears that indicates site validation of the default certificate.

This security alert does not appear if you

- add a site-specific certificate
- suppress the message on your client browser

If you want a site-specific certificate, obtain a site certificate for your system from a Certificate Authority (CA) vendor. Certificate files must use the .PEM format. When you obtain a certificate and private security key, install them on the BCM 5.0.

Attention: Ensure that you maintain a copy of your certificate and private security keys in a secure place, preferably offsite. This provides you with a backup if your system requires data reentry.

Security policies

You can use the BCM 5.0 Security Policies pane in Element Manger to establish security policies that apply to the entire system, rather than to individual users.

The following table describes the fields in the Security policies pane:

Table 17 Security Policies field

Attribute	Value	Description
Entry Policy tab		
Disable Telset login	Check box	When selected, specifies when users cannot access the system through a Telset interface. Default: clear If the check box is selected, and DHCP changes the system IP address, you can determine the new IP address through the OAM port.
Disable post-login message	Check box	When selected, specifies that the post-login security warning does not open during log on. Default: clear

Copyright © 2009 Nortel Networks

Table 17 Security Policies field

Attribute	Value	Description
Post-login message	Text	Displays the post-login security warning. You can edit the warning to customize the message for your system.
Nortel Support		
Hide Challenge Key	check box	When selected, displays asterisks to hide the characters used in the challenge key. Default: cleared.
Challenge Key	Text	Specifies an alphanumeric key. The service technician requires this key as part of the access information to remotely access your system. Default: trust no one. If you change the default string, retain a record of the new string so that Nortel Technical Support can access your system during a support service call. Ensure the key is at least one character long to allow Nortel support operation.
Local Authentication Policy tab		
Credential Complexity		
Credential Type	Element Manager: Alphanumeric Telset: Numeric	Specifies the variety of characters an alphanumeric password must include. The complexity level defines the required number of each type of character User IDs are not case-sensitive). You must use a numerical Telset interface password. Password complexity for these passwords defines how many unique digits the system requires.
Minimum User ID Length	Element Manager: Alphanumeric 1—32 Telset: Numeric 1—16	Specifies the minimum number of characters that the system requires for each type of credential.
Minimum password length	Element Manager: Alphanumeric 1—32 Telset: Numeric 1—16	Specifies the minimum number of characters that you must enter for a new password. Alphanumeric passwords are case-sensitive. Ensure this setting is the same as or greater than the complexity level setting. For example, if you have a complexity level of two, two different types of characters or two unique numbers, ensure the password is at least two characters long.

Copyright © 2009 Nortel Networks

Table 17 Security Policies field

Attribute	Value	Description
Password complexity level (Element Manager)	0 1 2 3 4	Defines the number of character types that Element Manger requires for an alphanumeric password. 0: No complexity checks 1: one character type 2: at least two character types 3: at least three character types (default) 4: all four character types A password complexity higher than 0 ensures that users cannot use a username as the password. Check minimum length setting to ensure that it is equal to or greater than the complexity level. Password complexity consists of the following types: upper case alphabet (English) lower case alphabet (English) westernized Arabic numbers non-alphanumeric characters ($, !, %, ^, period, comma)
Password Complexity Level (Telset interface)	0 1 2 3 4 5	Specifies the number of unique digits that Telset requires as part of a password: 0: No complexity checks 1: one unique digit 2: two unique digits 3: three unique digits 4: four unique digits 5: prevent consecutive numbering A password complexity higher than 0 ensures that users cannot use a username as the password. Check the minimum length setting to ensure that it is equal to or greater than the complexity level.
Lockout on Failed Logon		
Enable lockout	check box	When selected, specifies that enable lockout rules apply to users.
Lockout counter	numeric value	Specifies the number of times the user can attempt to enter an invalid password before they become locked out. Default: 25; for increased security, change this number to 5.

Copyright © 2009 Nortel Networks

Table 17 Security Policies field

Attribute	Value	Description
Lockout duration (min)	minutes	Specifies the amount of time after the user becomes locked out before they can log on again. Reset the lockout counter to zero. Default: 30.
Lockout counter reset	minutes	Specifies the number of minutes after a lockout before the lockout counter automatically resets to zero. Default: 30. For example, if the lockout counter reset has a value of 30 minutes and a user enters invalid passwords, but does not reach the lockout counter threshold, and then waits 30 minutes before trying again, the lockout counter resets and begins counting from 1 again. If the user enters invalid passwords until they reach the lockout counter threshold, the Lockout duration determines when the user can log back on to the system.
Password Expiry		
Enable password expiry	check box	When selected, specifies that the account expires at a specified time.
Days before password expire	up to 256	Enter the number of days the password can remain valid before it must be changed.
Warning days before password expire	numeric value	Enter the number of days prior to password expiry that a user receives notification.
Password History		
Enable password history	check box	When selected, the BCM stores a list of previously used passwords and prevents users from reusing them.
Password history length	numeric value	Enter the number of previously used passwords to store and check for this account, to prevent password reuse.
Authentication Service Policy tab		
Account management	menu	Specifies the method used to use to authenticate users when they log on. Options include Local Authentication and RADIUS. If you select RADIUS, you must also select the Enabled check box in the Radius Servers pane.
Server priority	Primary Secondary	Specifies which RADIUS server to use as the primary server for authentication, and which server to use as a secondary server to authenticate users when the primary server becomes unavailable.
Server name	alphanumeric	Name of the RADIUS server.
Server IP address	<IP address>	IP address of the RADIUS server.
Server Port	numeric	Port number of the RADIUS server.

Copyright © 2009 Nortel Networks

Table 17 Security Policies field

Attribute	Value	Description
Enabled	check box	When selected, specifies to use RADIUS authentication. You must also select this check box before the BCM uses RADIUS authentication.
Server message timeout	numeric	Length of time to wait for the server to respond to a request for authentication before timing out. Nortel recommends that use a setting of 2.
Server retries	numeric	Number of times to retry connecting with the primary server before using an alternate means of authenticating the user. Nortel recommends that you use a setting of 2.
Server shared secret	alphanumeric	Key required for the BCM to communicate with the RADIUS server. Nortel recommends that you use a key at least 64 characters in length.
Session Management Policy tab		
Session time out (min.)	minutes	Specifies the number of minutes a logged in user account can remain inactive before the system ends the session and logs out the account. If you leave this field blank, the session is ends only when the user logs off.
Active sessions		
User ID	Read-only	Displays the user ID of the active session.
IP address	Read-only	Displays the IP address of the active session.
Login date	Read-only	Displays the log on date of the active session.
SSL and SSH Policy tab		
SSL		
Install Web Server Certificate (SSL)	Button	Downloads application security certificates to the server where SSH runs to ensure a secure copy connection for operations, such as backup and restore, upgrades and patches.
SSH		
Fingerprint	alphanumeric	Displays an identifier for the application security certificate.
Generate new SSH key-pair	Button	Opens the file system browser to allow a system-specific security certificate and the accompanying Private key to be selected for SSL.
Transfer Public Key	Button	Downloads a public security certificate.

Copyright © 2009 Nortel Networks

User account and group management

This section contains information on how to manage user accounts and groups

User account and group management navigation

- User accounts (page 73)
- Default passwords (page 74)
- Default user account groups (page 75)
- Default access privilege (non-set) (page 79)
- Telset access security (page 87)
- User account blocking (page 89)

User accounts

User accounts are defined by

- a unique user ID visible only to authenticating services; Element Manager IDs are alphanumeric and Telset IDs are numeric.
- a unique user name assigned for either or both the Element Manager and Telset configuration that includes a minimum length that you define when you configure the security policies.
- a unique password assigned for any defined user ID. Passwords must satisfy the Password Policy settings for the system that you define when you configure the security policies.
- a list of group attributes that allow the user specific access privileges in the system

After you create an account, you can assign groups to that account. Groups are sets of privileges based on user tasks or roles. For example, if you have a user who is responsible for remote monitoring, you can create an account for that user and then assign a group to the account; the group that you assign would contain the appropriate privileges for that role. The BCM has default groups available, but you can refine the privileges available within a group to suit the needs of your network. In this example, you could assign the default group called Remote Monitoring, which would allow the user to do such things as view metrics and alarms.

The User ID of the account profiles created through the set based interface cannot be modified through the Element Manager.

Two default user accounts are provided:

- The nnadmin account is read only and cannot be deleted or disabled

Copyright © 2009 Nortel Networks

- The nnguest account provides customers with web-only access. All access to the Apache web server requires a valid administrator username and password

Auditing for user accounts includes:

- creation date, time, and the user ID that created the account
- modify date, time, and the user ID that modified the account
- expiry date and time, if enabled
- login history, including failed attempts and the date and time of the last successful attempt
- an audit log that tracks logged-in user transactions, including user account changes

Remote users can have a callback number assigned as well. This feature allows authentication of remote users calling in through a modem. After authentication, the BCM 5.0 will call the user back at the number specified.

Nortel recommends that each user have a separate user account (User Name) with a unique password. These are set up by a user with administrator privileges in the Element Manager. The password only shows up as asterisks on the Element Manager panel. If the password is lost, the administrator can reset the password for the user by re-entering the password in the user account. Each user can access their own user information and change their password. User accounts can be disabled, either manually or through dated expiry.

On the Telset administration menu (F9*8), only the administrator (SBAInstaller) can enable or disable the Telset user IDs and modify or delete Telset user passwords.

Default passwords

The following table lists the available default passwords for the Element Manager interface, the Telset interface, and the voice mail interface.

Table 18 Default passwords

User ID	Default passwords	Telset ID	Default Telset password	Function	Available at startup?
nnadmin	PlsChgMe!	738662	266344	Read-only installer/system administrator	Yes
nnguest	nnguest			Read-only web-only access	Yes
		738266	266344	Set-based installer level	No
		738727	727587	Set-based administration	No

Copyright © 2009 Nortel Networks

Table 18 Default passwords

User ID	Default passwords	Telset ID	Default Telset password	Function	Available at startup?
		738236	23646	Set-based coordinator functions	No
		738227	22742	Set-based basic access	No
voicemail admin	PlsChgMe!	738862	266344	Voice mail administration (see Note 1)	No
Note 1: This account is not created by default. You must add a voice mail account using F9*8.					

New accounts are created from the startup profile with a default password of Time4Chg!

Attention: The default Administrator password includes full access to the system. Change the default password as soon as the initial system setup completes and system function is verified.

Default user account groups

The BCM 5.0 includes a number of default read-only groups that provide a predetermined set of access privileges. You can assign additional privileges to groups. The following table lists the default privilege levels for each default group, described in Default access privilege (non-set) (page 79) and Telset access security (page 87).

Table 19 Default user account groups

Group name	Privileges	Notes
SBA Installer	SBAInstaller IP Set Registration	SBA - Installer group access privileges (page 88) IP Set Registration access privileges (page 80)
SBA Coordinator+	SBASystemCoord	SBA - System Coordinator group access privileges (page 88)
SBA Coordinator	SBASystemCoordBasic Guests	SBA - System Coordinator group access privileges (page 88) Guests access privileges (page 83)
SBA Basic	SBABasic	SBA - Basic group access privileges (page 89)
Voice Mail & Contact Center Group	VoiceMailAdmin	If the user account is only assigned this group, the user will only be able to access the voice mail and Contact Center administration. Voice Mail and Contact Center access privileges (page 79)

Copyright © 2009 Nortel Networks

Table 19 Default user account groups (continued)

Contact Center	Contact Center	If the user account is only assigned this group, the user will only be able to access Contact Center administration. Contact Center access privileges (page 79)
CDR Application	CDRApp	If the user account is only assigned this group, the user will only be able to access Call Detail Recording (CDR) functions. CDR App access privileges (page 81)
CTE Application	CTEApp	CTE App access privileges (page 80)
BCM Monitor Application	Application - BCM Monitor	BCM Monitor Appl access privileges (page 81)
Administrator	SBA IP Set Registration	IP Set Registration access privileges (page 80)
	Application - BCM Monitor	BCM Monitor Appl access privileges (page 81)
	CDRApp	CDR App access privileges (page 81)
	PPP Login	PPP Access access privileges (page 81)
	AdminDownload	Admin Download access privileges (page 82)
	Exclusive Access	Exclusive Access access privileges (page 82)
	Admin	Admin access privileges (page 82)
	DataAdmins	DATA Admins group access privileges (page 82)
	Remote Access	Remote Access access privileges (page 83)
	Voice Admins	Voice Admins access privileges (page 83)
	Software Upgrade	Software Upgrade access privileges (page 85)
	Alarm Viewer	Alarm Viewer access privileges (page 85)
	SBA Installer Security	SBA - Installer group access privileges (page 88)
	CTE Appl	CTE App access privileges (page 80)
	Operational Logs	Operational Logs access privileges (page 86)
	Diagnostic Logs	Diagnostic Logs access privileges (page 86)
	Modem dial out	Modem dial out access privileges (page 86)
	ISDN dial in	ISDN dial in access privileges (page 86)
	ISDN dial out	ISDN dial out access privileges (page 86)
Data Admin	DATAAdmins	DATA Admins group access privileges (page 82)

Copyright © 2009 Nortel Networks

Table 19 Default user account groups (continued)

Remote Access	PPP RemoteAccess	Remote Access access privileges (page 83)
Guest	Guests	Guests access privileges (page 83)
Voice Admin	IP Set Registration VoiceMail Admins Alarm Viewer	IP Set Registration access privileges (page 80) Voice Admins access privileges (page 83) Alarm Viewer access privileges (page 85)
Power Users	SBA - IP Set Registration	IP Set Registration access privileges (page 80)
	DATAAdmins	DATA Admins group access privileges (page 82)
	VoiceMailAdmin	Voice Admins access privileges (page 83)
	Alarm Viewer	Alarm Viewer access privileges (page 85)
Backup Operators	BackupOperators	Backup Operators access privileges (page 84)
Security	Security AdminDownload Diagnostic Logs Operational Logs	Security access privileges (page 79) Admin Download access privileges (page 82) Diagnostic Logs access privileges (page 86) Operational Logs access privileges (page 86)
Admin Download	AdminDownload	Admin Download access privileges (page 82)
Guest Download	GuestDownload	Can access the BCM 5.0 Web page for application downloads and user documentation. Guests access privileges (page 83)
Remote Monitoring	Remote Monitor Operational Logs	Remote Monitoring access privileges (page 85) Operational Logs access privileges (page 86)
Software Upgrade	Software Upgrade	Software Upgrade access privileges (page 85)

Copyright © 2009 Nortel Networks

Table 19 Default user account groups (continued)

Local Administrator	Admin	Admin access privileges (page 82)
	Admin Download	Admin Download access privileges (page 82)
	Alarm Viewer	Alarm Viewer access privileges (page 85)
	Application - BCM Monitor	BCM Monitor Appl access privileges (page 81)
	BackupOperators	Backup Operators access privileges (page 84)
	Business Applications	
	CDR Application	CDR App access privileges (page 81)
	CTE Application	CTE App access privileges (page 80)
	Contact Center	If the user account is only assigned this group, the user will only be able to access Contact Center administration. Contact Center access privileges (page 79)
	DATAAdmins	DATA Admins group access privileges (page 82)
	Diagnostic Logs	Diagnostic Logs access privileges (page 86)
	Exclusive Access	Exclusive Access access privileges (page 82)
	Guests	Guests access privileges (page 83)
	GuestDownload	Can access the BCM 5.0 Web page for application downloads and user documentation. Guests access privileges (page 83)
	Operational Logs	Operational Logs access privileges (page 86)
	Remote Access	Remote Access access privileges (page 83)
	Remote Monitor	Remote Monitoring access privileges (page 85)
	SBA - IP Set Registration	IP Set Registration access privileges (page 80)
	SBABasic	SBA - Basic group access privileges (page 89)
	SBAInstaller	SBA - Installer group access privileges (page 88)
	SBASystemCoordBasic	SBA - System Coordinator group access privileges (page 88)
	Security	Security access privileges (page 79)
	Software Upgrade	Software Upgrade access privileges (page 85)
	System - Serial Port	
	Voice Admins	Voice Admins access privileges (page 83)
	VoiceMailAdmin	Voice Admins access privileges (page 83)

Copyright © 2009 Nortel Networks

Default access privilege (non-set)

The group privileges further refine access availability to groups and users. You can assign more than one privilege to a group and more than one group to a user account. The group with the most privileges defines what the user can access.

For instance, the Admin includes has all privileges; therefore, if this group is assigned to the user, any other group assignments with less access are superseded.

The default privileges are arranged as profiles with access privileges. The sections below list access privileges for each profile.

Voice Mail and Contact Center access privileges

You can set access privileges for:

- SBA - Voice Mail
- EM - CONFIG - Administrator Access - Accounts and Privileges - Current User
- EM - CONFIG - Applications - Voice Messaging
- EM - CONFIG - Applications - Contact Center
- Web Documentation - User Documentation
- BCM 5.0 Applications - Applications - CallPilot Manager
- Web - User Applications

Contact Center access privileges

You can set access privileges for:

- EM - CONFIG - Administrator Access - Accounts and Privileges - Current User
- Web Documentation - User Documentation
- BCM 5.0 Applications - Applications - CallPilot Manager
- Web - User Applications

Security access privileges

You can set access privileges for:

- EM - CONFIG - Administrator Access - Accounts and Privileges - Current User
- EM - CONFIG - Administrator Access - Accounts and Privileges

Copyright © 2009 Nortel Networks

- EM - CONFIG - Administrator Access - Security Policies
- EM - CONFIG - Administrator Access - SNMP
- EM - CONFIG - Administrator Access - Dial In
- EM - CONFIG - Administrator Access - Dial Out
- EM - CONFIG - Telephony - Call Security
- EM - ADMIN - General - Alarm
- EM - ADMIN - General - Alarm Setting
- EM - ADMIN - General - SNMP Trap Setting
- EM - ADMIN - General - Service Manager
- EM - ADMIN - Utilities - Reset
- EM - ADMIN - Software Management - Software Inventory Panel (read-only)
- Web Documentation - User Documentation
- Diagnostic Logs - Diagnostic Log Transfer - Diagnostic Only component logs
- SSL Certificate Transfer - Certificate Transfer - SSL Certificate and SSH Key upload or download
- Web - User Applications

CTE App access privileges

You can set access privileges for:

- EM - CONFIG - Administrator Access - Accounts and Privileges - Current User
- Web Documentation - User Documentation
- BCM 5.0 Applications - Applications - CTE DA Pro AE
- Web - User Applications

IP Set Registration access privileges

You can set access privileges for:

- SBA - IP Set Registration
- EM - CONFIG - Administrator Access - Accounts and Privileges - Current User
- Web Documentation - User Documentation
- Web - User Applications

Copyright © 2009 Nortel Networks

BCM Monitor Appl access privileges

You can set access privileges for:

- EM - CONFIG - Administrator Access - Accounts and Privileges - Current User
- EM - ADMIN - Utilities - BCM Monitor
- Web Documentation - User Documentation
- BCM 5.0 Applications - Applications - BCM Monitor
- Web - User Applications

CDR App access privileges

You can set access privileges for:

- EM - CONFIG - Administrator Access - Accounts and Privileges - Current User
- Web Documentation - User Documentation
- BCM 5.0 Applications - Applications - Call Detail Recording
- Web - User Applications

PPP Access access privileges

You can set access privileges for:

- EM - CONFIG - Administrator Access - Accounts and Privileges - Current User
- Web Documentation - User Documentation
- RAS - Applications - PPP
- Web - User Applications

Guest Download access privileges

You can set access privileges for:

- Web Documentation - User Documentation
- Web Application Download - Web Download - Callpilot Unified Messaging
- Web Application Download - Web Download - Desktop Assistant
- Web Application Download - Web Download - Desktop Assistant Pro
- Web Application Download - Web Download - 2050 Soft Phone
- Web Application Download - Web Download - Personal Call Manager

Copyright © 2009 Nortel Networks

- Web Application Download - Web Download - Lan CTE Client

Admin Download access privileges

You can set access privileges for:

- Web Documentation - User Documentation
- Web Documentation - Admin Documentation
- Web Application Download - Web Download - Element Manager
- Web Application Download - Web Download - NCM for BCM 5.0
- Web Application Download - Web Download - Callpilot Unified Messaging
- Web Application Download - Web Download - Desktop Assistant
- Web Application Download - Web Download - Desktop Assistant Pro
- Web Application Download - Web Download - 2050 Soft Phone
- Web Application Download - Web Download - Personal Call Manager
- Web Application Download - Web Download - Lan CTE Client
- Web Application Download - Web Download - BCM Monitor
- Web Application Download - Web Download - CDR Client Wrapper Utility
- Web Application Download - Web Download - SSH

Exclusive Access access privileges

You can set access privileges for:

- EM - CONFIG - Administrator Access - Accounts and Privileges - Current User
- Web Documentation - User Documentation
- Web - User Applications

Admin access privileges

You can set all access privileges.

DATA Admins group access privileges

You can set access privileges for:

- EM - CONFIG - System - IP Subsystem
- EM - CONFIG - Administrator Access - Current User
- EM - CONFIG - Administrator Access - Dial In

Copyright © 2009 Nortel Networks

- EM - CONFIG - Administrator Access - Dial Out
- EM - CONFIG - Resources - Media Gateways
- EM - CONFIG - Data Services- DHCP Server Settings
- EM - ADMIN - General - Alarm
- EM - ADMIN - General - Alarm Setting
- EM - ADMIN - Utilities - BCM Monitor
- EM - ADMIN - Utilities - Ping
- EM - ADMIN - Utilities - Trace Route
- Web Documentation - User Documentation
- Web - User Applications

Remote Access access privileges

You can set access privileges for:

- EM - CONFIG - Administrator Access - Accounts and Privileges - Current User
- EM - CONFIG - Administrator Access - SNMP
- EM - CONFIG - Administrator Access - Dial In
- EM - CONFIG - Administrator Access - Dial Out
- EM - ADMIN - General - SNMP Trap Destinations
- Web Documentation - User Documentation

Guests access privileges

You can set access privileges for:

- Read-only access to all but Utilities, Backup and Restore, and Log Management
- EM - CONFIG - Administrator Access - Accounts and Privileges - Current User
- Web Documentation - User Documentation
- Web - User Applications

Voice Admins access privileges

You can set access privileges for:

- EM - CONFIG - System - Identification
- EM - CONFIG - System - Time and Date

Copyright © 2009 Nortel Networks

- EM - CONFIG - System - Keycodes
- EM - CONFIG - System - IP Subsystem
- EM - CONFIG - Administrator Access - Accounts and Privileges - Current User
- EM - CONFIG - Resources - all
- EM - CONFIG - Telephony - all
- EM - CONFIG - Data Services - DHCP Server Setting
- EM - CONFIG - Applications - LAN CTE
- EM - CONFIG - Applications - Voice Messaging/Contact Center
- EM - ADMIN - General - Alarm
- EM - ADMIN - General - Alarm Setting
- EM - ADMIN - General - Hardware Inventory
- EM - ADMIN - General - Alarm
- EM - ADMIN - General - Alarm Setting
- EM - ADMIN - System Metrics - Qos Monitor
- EM - ADMIN - System Metrics - NTP Metrics
- EM - ADMIN - Telephone Metrics - all
- EM - ADMIN - Utilities - BCM Monitor
- EM - ADMIN - Utilities - Reset
- EM - ADMIN - Software Management - all as read only
- Web Documentation - User Documentation

Backup Operators access privileges

You can set access privileges for:

- EM - CONFIG - Administrator Access - Accounts and Privileges - Current User
- EM - ADMIN - Backup and Restore - Backup
- EM - ADMIN - Backup and Restore - Restore
- Web Documentation - User Documentation
- Web - User Applications

Copyright © 2009 Nortel Networks

Remote Monitoring access privileges

You can set access privileges for:

- EM - CONFIG - Administrator Access - Accounts and Privileges - Current User
- EM - ADMIN - General - Alarm as read only
- EM - ADMIN - General - Alarm Setting as read only
- EM - ADMIN - General - SNMP Trap Destinations
- EM - ADMIN - General - Service Manager as read only
- EM - ADMIN - General - Hardware Inventory as read only
- EM - ADMIN - System Metrics - Qos Monitor
- EM - ADMIN - System Metrics - UPS Metrics as read only
- EM - ADMIN - System Metrics - NTP Metrics as read only
- EM - ADMIN - Telephone Metrics - all
- EM - ADMIN - Utilities - BCM Monitor
- Web Documentation - User Documentation
- Web - User Applications

Software Upgrade access privileges

You can set access privileges for:

- EM - CONFIG - Administrator Access - Accounts and Privileges - Current User
- EM - ADMIN - Utilities - Reset
- EM - ADMIN - Software Management - all
- Web Documentation - User Documentation
- Web - User Applications

Alarm Viewer access privileges

You can set access privileges for:

- EM - CONFIG - Administrator Access - Accounts and Privileges - Current User
- EM - ADMIN - General - Alarm
- EM - ADMIN - General - Alarm Setting
- EM - ADMIN - General - Hardware Inventory

Copyright © 2009 Nortel Networks

- Web Documentation - User Documentation
- Web - User Applications

Operational Logs access privileges

You can set access privileges for:

- Web Documentation - User Documentation
- EM - ADMIN - Logs - Management
- Web - User Applications

Diagnostic Logs access privileges

You can set access privileges for:

- Web Documentation - User Documentation
- EM - ADMIN - Logs - Management

Modem dial out access privileges

You can set access privileges for:

- EM - CONFIG - Administrator Access - Accounts and Privileges - Current User
- Web Documentation - User Documentation
- Web - User Applications
- PPP dial out using analog modem

ISDN dial in access privileges

You can set access privileges for:

- EM - CONFIG - Administrator Access - Accounts and Privileges - Current User
- Web Documentation - User Documentation
- Web - User Applications
- PPP dial out using ISDN

ISDN dial out access privileges

You can set access privileges for:

- EM - CONFIG - Administrator Access - Accounts and Privileges - Current User

Copyright © 2009 Nortel Networks

- Web Documentation - User Documentation
- Web - User Applications
- PPP dial out using ISDN

Telset access security

You can use the Telset administration interface (FEATURE 9*8) to activate or deactivate the Telset default access user accounts. You can also use this interface to change the password for these accounts. For further information about using Telset features, see the Telset Administration Guide (NN40170-604).

The Telset group privileges apply specifically to the following Telset interfaces:

- FEATURE 9*8 (Administrator access only)
- FEATURE **266344 (**CONFIG) (telephony interface)
- FEATURE 983 (CallPilot interface)

Use the preceding interfaces only as supplementary configuration portals. You can also block access to these interfaces when you configure the system security policies.

Table 20 Default Telset group access privileges

User ID	Default password	Telset ID	Default Telset password	Function	Available at startup?
nnadmin	PlsChgMe!	738662	266344	Read-only installer/ system administrator	Yes
nnguest	nnguest			Read-only web-only access	Yes
		738266	266344	Set-based installer level	No
		738727	727587	Set-based administration	No
		738236	23646	Set-based coordinator functions	No
		738227	22742	Set-based basic access	No
voicemailadmin	PlsChgMe!	738862	266344	Voice mail administration	No

Copyright © 2009 Nortel Networks

Telset group access privileges

There are four set-based group access privileges. The following sections list the access privileges in order of greatest to least.

SBA - Installer group access privileges

You can set access privileges for:

- SBA - FEATURE 9*8
- SBA - Installer Rights
- IP Set Registration (when IP set registration is configured and a global password setting is used)
- EM - CONFIG - Administrator Access - Accounts and Privileges - Current User
- Web Documentation - User Documentation
- BCM 5.0 Applications - User Applications

SBA - System Coordinator and group access privileges

You can set access privileges for:

- SBA - Coordinator Plus Rights
- EM - CONFIG - Administrator Access - Accounts and Privileges - Current User
- Web Documentation - User Documentation
- BCM 5.0 Applications - User Applications

SBA - System Coordinator group access privileges

You can set access privileges for:

- SBA - Coordinator Rights
- EM - CONFIG - Administrator Access - Accounts and Privileges - Current User
- Web Documentation - User Documentation
- BCM 5.0 Applications - User Applications

Copyright © 2009 Nortel Networks

SBA - Basic group access privileges

You can set access privileges for:

- SBA - Basic Rights
- EM - CONFIG - Administrator Access - Accounts and Privileges - Current User
- Web Documentation - User Documentation
- BCM 5.0 Applications - User Applications

User account blocking

Different methods exist to block user access to the system based on your security and administrative requirements.

- You can block unauthorized access by ensuring that you change all default passwords after the system is set up and verified.
- You can also block user access by simply changing the password. Retain a record of the password, as this information does not appear either on the Element Manager pane or in the programming record file.
- You can increase the complexity required for both Element Manager and Telset passwords to make it difficult for unauthorized users to inadvertently guess the correct password. Increase complexity by increasing the type of characters required and the minimum length of the password.
- You can configure the system to lock out a user if they enter the password incorrectly a (configurable) number of times. You can unlock the account through the user account record, or the user can wait for the lockout timer to run out before attempting to log on again. The user account shows the last time a user failed to log on.
- You can configure a user account to automatically expire on a given date.
- You can manually disable the account. If the user is currently logged in, this takes effect at the next logon attempt.

If you want to decrease the amount of system access, you can delete groups and reassign groups with lower access privileges to the user account.

The administrator that performs maintenance tasks can lock the system during the duration of the maintenance. Any user already logged on remains logged on, but cannot log on again until the Exclusive Access timer runs out.

Copyright © 2009 Nortel Networks

Accounts and Privileges

This section describes the tabs and fields available on the Accounts and Privileges pane.

Accounts and Privileges navigation

- Current account (page 90)
- View by accounts (page 91)
- View by groups (page 97)

Current account

The Current Account tab provides a summary of user information about the person currently signed into Element Manager.

Table 21 Current account tab

Attribute	Value	Description
Account Notifications	Read-only	This field displays account notifications, such as notifications of password expiries.
User ID	Read-only	A read-only field that a user with administrator privileges can change on the user accounts pane.
Password	Alphanumeric	Requires a password entry that contains all the security requirements.
		Changes to the password take effect at the next logon session.
Telset user ID	Read-only	A read-only field that a user with administrator privileges can change on the user accounts pane.
Telset password	Numeric	Requires a numeric password entry unique for each user. These strings must satisfy the security requirements.
		This password takes effect at the next logon session.
Last Successful login	Read-only	Indicates the last date and time the user account was used to log on to the system (read only).
Account Management	Read-only	Displays the method used to authenticate the user session: local authentication or centralized authentication through a RADIUS server.
Failed Login History		
Last failed login	read-only	Displays the date and time of the last failed login.
From		Displays the interface from which the login was attempted.
Failed Telset Login History		
Last failed login	read-only	Displays the date and time of the last failed login by a Telset user.

Copyright © 2009 Nortel Networks

Table 21 Current account tab

Attribute	Value	Description
From		Displays the interface from which the login was attempted.
Exclusive Access		
Exclusive access time remaining	numeric seconds	Specifies the amount of time left before other users can log on to the system. Visible only to users with administrator privileges.
Buttons		
Enable Exclusive Access	numeric minutes	Opens the Enable Exclusive Access dialog box from which you enter the amount of time that you want to have exclusive access to the system. Exclusive Access does not disable the access of users who are currently logged on. Visible only to users with exclusive access privileges.
Disable Exclusive Access		Stops the exclusive access timer and allows other users back on to the system. Visible only to users with exclusive access privileges.

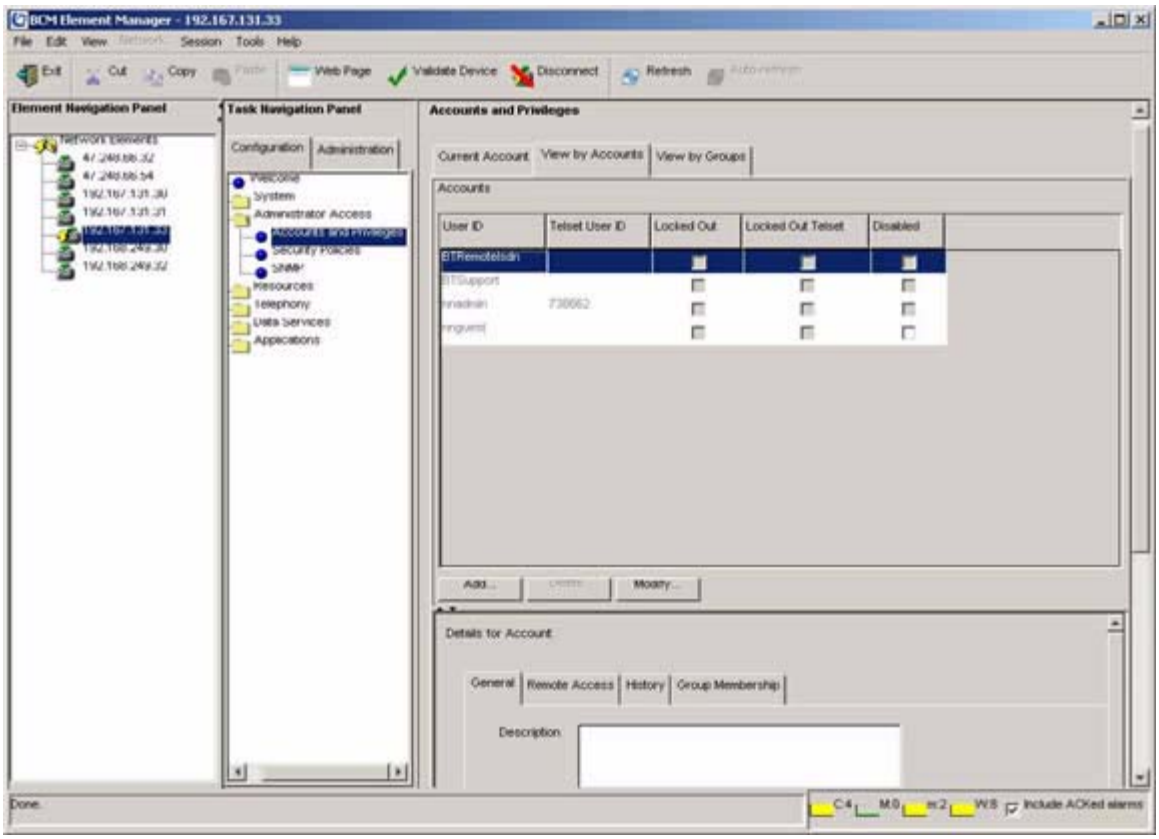
View by accounts

The View by Accounts tab contains the table that defines individual user accounts. In this table you define how the system identifies the user. You also define what privileges the user has by assigning the user to groups.

You can add, delete, or modify user account information in the table. When you add or modify a user, you can enter a password for both the Element Manager interface and the Telset interface.

Copyright © 2009 Nortel Networks

Figure 17 Accounts and Privileges, View by Accounts tab



The following table shows the fields of the View by Accounts tab.

Table 22 View by Accounts fields

Attribute	Value	Description
User ID	alphanumeric	Displays the accounts by User ID
Telset User ID	numeric	Displays the accounts by Telset User ID
Locked Out	Check box	Indicates if a user is locked out. When selected, the user cannot access the system. This field becomes selected when a user enters an incorrect password too many times, and the system locks the user account. The user must wait for the lockout timer to run out, or an administrator can unlock the user account using “Re-enable a locked-out user” on page 123.

(1 of 2)

Copyright © 2009 Nortel Networks

Table 22 View by Accounts fields

Attribute	Value	Description
Locked Out Telset	Check box	Indicates if a user is locked out. When selected, the user cannot access the system. This field becomes selected when a user enters an incorrect password too many times, and the system locks the user account. The user must wait for the lockout timer to run out, or an administrator can unlock the user account using "Re-enable a locked-out user" on page 123.
Disabled	Check box	Indicates if a user account is disabled When selected, the user cannot access the system. This field becomes selected when the account expiry date is reached. See "Enabling and disabling an account" on page 124.
Buttons		
Add		Opens the Add Account dialog box
Delete		Deletes the selected user account
Modify		Opens the Modify Account dialog box
	(2 of 2)	

Attention: You cannot delete the nnadmin user; therefore, ensure that you change the default password as soon as possible after system setup. Keep a record of the password in a safe place.

If you select a user on the Users list, two additional panes appear in the lower frame:

- Use the General pane to see the current status of the account. See View by account: general (page 93)
- Use the Group Membership pane to associate the account to group profiles, which determines user access. See View by account: group membership (page 96).

View by account: general

The General panel provides user account information and account control settings.

The following table describes each field on this pane.

Copyright © 2009 Nortel Networks

Table 23 View by Accounts: General fields

Attribute	Value	Description
Description	Alphanumeric	Displays the descriptive name and information for the user or the user function. You can leave this field blank.
Account Expiry		
Account will be disabled on	Date	Specifies the date and time when the user account expires. The menu opens a calendar.
Enable account expiry	Check box	When selected, specifies that the user account automatically expires at the specified date and time.
Account Textual Credentials		
Password expiry	Menu	Specifies the date to force a password change.
Change password on login	Check box	When selected, forces a user to change his or her password when logging on.
Account Telset Credentials		
Password expiry	Menu	Specifies the date to force a Telset password change.
Change password on login	Check box	When selected, forces a Telset user to change his or her password when logging on.

View by account: remote access

The Remote Access pane provides callback settings to verify user information, as well as configuration of NAT rules for dial-up users. The following table describes each field on this pane.

Table 24 View by Accounts: Remote Access

Attribute	Value	Description
Modem Callback Number	Telephone #	Specifies the number the system will call to verify the dial-up user access
Modem Callback Passcode	User ID	Specifies the passcode the system uses to confirm the callback is legitimate
ISDN Callback Number	Telephone #	Specifies the number the system will call to verify the ISDN user access
IP Address		
BCM IP Address	IP address	Specifies the PPP IP address of the BCM when connecting with analog modem or ISDN terminal adaptors.
Enable remote modem access menu and CLIDs	Check box	Indicates whether the user is allowed to enable modem remotely using Auto Attendant or Voice Mail menu By default it is disabled.

Copyright © 2009 Nortel Networks

Table 24 View by Accounts: Remote Access

Attribute	Value	Description
External modem CLID	Numeric	Specifies the calling line identification number. If the call with matching calling line identification number is received, the BCM will redirect the call to the modem.
Low priority external modem CLID	Numeric	Specifies the calling line identification number. If the call with matching calling line identification number is received, the BCM will redirect the call to the modem.
NAT Rules*		
Rule 1: Dial-in Side	IP address	Enter an IP address on a dial-in interface to be translated.
LAN Side	IP address	Enter an IP address on the local LAN to use when translating the dial-in address in Rule 1.
Rule 2: Dial-in Side	IP address	Enter an IP address on a dial-in interface to be translated.
LAN Side	IP address	Enter an IP address on the local LAN to use when translating the dial-in address in Rule 2.
Rule 3: Dial-in Side	IP address	Enter an IP address on a dial-in interface to be translated.
LAN Side	IP address	Enter an IP address on the local LAN to use when translating the dial-in address in Rule 3.
Rule 4: Dial-in Side	IP address	Enter an IP address on a dial-in interface to be translated.
LAN Side	IP address	Enter an IP address on the local LAN to use when translating the dial-in address in Rule 4.
Note 1: Multicast IP addresses cannot be used for NAT rules.		

View by account: history

The History pane provides user account and log on histories and account control settings.

The following table describes each field on this pane.

Table 25 View by Accounts: History fields

Attribute	Value	Description
Account history		
Account created	Read-only	Specifies the date that the user record was added.
Created by		Specifies the user ID of the person who added the user account.
Last Modified	Read-only	Specifies the date the user record was last modified.
Modified by		Specifies the user ID of the person who last modified the account.
Login history		

Copyright © 2009 Nortel Networks

Table 25 View by Accounts: History fields

Attribute	Value	Description
Last successful login	Read-only	Specifies the date the user last successfully logged on to the Element Manager.
Failed login count	Read-only	Specifies the number of times the user tried and failed to log on before successfully logging on or becoming locked out. If the count matches the failed login threshold, a value of true appears in the Locked Out column on the Accounts table.
Last failed login	Read-only	Specifies the date that the user last tried and failed to log on.
From	Read-only	Element Manager: Displays the IP address of the Element Manager
Telset login history		
Last successful login	Read-only	Specifies the date the user last successfully logged on to Telset.
Failed login count	Read-only	Specifies the number of times the user tried and failed to log on before successfully logging on or becoming locked out. If the count matches the failed login threshold, a value of true appears in the Locked Out column on the Accounts table.
Last failed login	read-only	Specifies the date that the user last tried and failed to log on.
From	read-only	Telset: Displays the DN of the telephone used to log on to the system.

View by account: group membership

Use the Group Membership pane to associate the user account with one or more functional groups. The user gains all the privileges assigned to each group added to the list. The following table describes each field on this pane.

Table 26 Group membership fields

Attribute	Value	Description
Account is Member of Groups	Default groups	Lists groups the user belongs to. See Telset group access privileges (page 88) for a list of the default groups and the privileges associated with each. Add, modify and delete groups from the View by groups (page 97) pane.
Buttons		
Add		Opens the Add Account dialog box. Choose the group or groups with the appropriate access privileges for the user. You cannot add user accounts to groups with read-only privileges.
Delete		Deletes the user account from the selected group.

Copyright © 2009 Nortel Networks

View by groups

Use the View by Groups pane to add or delete members from group profiles. The Groups pane lists all the groups currently available in the system. The following table describes each field on this pane.

Table 27 EM view by groups

Attribute	Description
Groups	Lists all the defined groups. See Telset group access privileges (page 88) for a list of the default groups and associated privileges.
Buttons	
Add	Opens the Add Group dialog box. Allows the creation of custom groups that provide combinations of privileges not covered by the default groups.
Delete	Opens the Confirm Delete dialog box. Allows for the deletion of any group, with the exception of the Admin Group.

For details about groups, See the panes described in View by account: general (page 93).

View by groups: general

For a selected entry in the Groups table, you can use the General details pane to define the system privileges assigned to this group, and to users assigned with this group. This pane also provides status information for the group. The following table describes each field on this pane.

Table 28 View by Groups: General panel fields

Attribute	Value	Description
Group History		
Group created	read-only	Specifies the date the group account was created
Created by		Specifies the user who created the account
Last modified	read-only	Specifies the last date the group account was changed
Modified by		Specifies the user who performed the changes
Group Privileges: Privileges		
Privilege	read-only	Lists the system access privileges allowed to members of the selected group
Actions:		
Add		Opens the Add Privilege to Group dialog box. Allows the privilege to be added to the group
Delete		Opens the Confirm Delete dialog box. Allows the privilege to be deleted from a group

Copyright © 2009 Nortel Networks

View by groups: members

For a selected group in the Groups table, you can use the Members pane to assign the group to existing user accounts and to view which accounts have the selected group assigned.

The following table describes each field on this pane.

Table 29 View by Groups: Group Membership fields

Attribute	Value	Description
Description	Read-only	Lists the user accounts in the selected group.
User ID	Alphanumeric	Displays the accounts by user ID.
Telset User ID	Numeric	Displays the accounts by Telset user ID.
Buttons:		
Add		Opens the Add Account to Group dialog box. Allows the user account to be added to the selected group.
Delete		Deletes the selected user account from the selected group.

Copyright © 2009 Nortel Networks

Administration fundamentals

The information in this chapter applies to both the BCM50 and the BCM450 platforms running BCM 5.0.

This chapter provides an overview of administration fundamentals, such as backup and restore operations, system logs, and utilities.

Navigation

- Data backup and restore (page 99)
- Log management (page 104)
- Hardware Inventory (page 113)
- Software updates and software inventory (page 114)
- BCM 5.0 utilities (page 114)
- BCM Monitor (page 119)
- Auto-Administration Management (page 125)
- SNMP MIBs (page 131)
- Application launcher (page 134)

Data backup and restore

This section provides information about how to back up and restore data from the BCM 5.0 system.

Data backup and restore navigation

- Scope of data backup and restore (page 99)
- Backup options (page 100)
- Restore optional components (page 103)

Scope of data backup and restore

Before you make administrative changes or as your BCM 5.0 system accumulates information, you can create a backup archive on the BCM itself, on a USB drive, or in another location on the network. At a later time, you can restore the data to the BCM 5.0.

Copyright © 2009 Nortel Networks

Attention: Nortel recommends that you back up BCM 5.0 data on a regular basis. In particular, you should perform a backup of the BCM 5.0 data before you undertake major configuration changes and before you apply a software update or upgrade. Prior to starting the upgrade, you should ensure that a complete and current backup archive for the BCM is available from an external location. In the event that the upgrade fails or a Software Reset is performed prior to installation of the R5 Factory Image patch (if the system was upgraded to Release 5), the archive will be the sole source for recovery of the system data. You should create a backup archive after you install the upgrade keycode. This ensures that it is restored with the other system data. After you have completed the upgrade, you should create a backup archive from the R5 system.

Attention: Nortel recommends that backup be taken prior to applying a software update. If the system needs to be updated using the backup file, the system must first be updated to the same or later patch level (for example, by applying the latest Smart Update) before applying the backup file.

You can restore data to the same system or to a different system at the same software release level. The BCM 5.0 checks the software release of the destination system and provides a warning if an incompatibility prevents the backup from restoring onto the selected system.

All passwords and database records included with your backup file are encrypted. When you perform a restore operation, the password on the target system must match the password used when you created the backup archive.

You can perform backup operations on demand or you can schedule a single backup or recurring backups. You can view the backup schedule and change it as required, and you can also save a record of the backup schedule that you configured.

You can perform a restore operation on demand only.

Backup options

You can backup and restore the settings and service data of your BCM 5.0.

During the backup procedure, you can exclude a number of optional services from the backup operation to ensure that service is not interrupted. The remainder of the services and settings are automatically included during a backup operation. The following table lists the components that you can choose to include or exclude from the backup operation.

Copyright © 2009 Nortel Networks

Table 30 Optional components

Component	Description
CallPilot Configuration	Includes Voice mail and Contact Center configuration information.
CallPilot Messages	Includes Voice mail and Contact Center configuration and Voice mail and Contact Center messages.
IP Music	Includes IP Music configuration.
Call Detail Recording	Includes Call Detail Recording configuration.

Select the optional components that best fit your backup strategy. For example, if you do not want to backup personal voice mail messages, you can select the CallPilot Configuration component and clear the CallPilot Messages component, which saves all CallPilot information except for personal voice mail messages.

When you perform a restore operation, you can choose to restore any optional components included in the backup operation.

BCM 5.0 backup file characteristics

When you perform a backup operation, the BCM 5.0 creates a backup archive and stores it in a location that you specify. The archive file includes embedded archives, each of which represent a different part of the BCM 5.0 system:

- archive.sig — ensures the integrity of all the data in the archive
- various archive files — contain the configuration settings and operating data

In addition to the configuration and application information, every backup operation includes the following files:

- Software Inventory — provides a snapshot of the software component release level and the file name is softwarelevel.tar.gz
- Software History — provides a snapshot of the software history

These files document the system software level from which you took the backup. They are located in the archive softwarelevel.tar.gz.

Backup archives transferred to servers or to attached USB storage devices are named according to the system name of the BCM 5.0, the date, and the time of the backup. Archives are prefixed with Bak_. For example, an archive created on July 8, 2005 at 1:52:55 pm is named Bak_acme-melbourne_20050708T135255.tar. Add .tar as extension to open a backup file.

Copyright © 2009 Nortel Networks

You can use only the most recent backup to the USB storage device for a restore operation. To access historical backup archives, attach the USB storage device to a personal computer and use the Restore from My Computer option.

Backup destinations

The following table lists the destinations to which you can back up data. Whichever destination you choose, the backup operation replaces the BCM copy of the archive, so that a copy of the most recent backup always remains on the BCM 5.0. You can use this to restore your BCM 5.0 without transferring a backup from an external device or server.

Table 31 Backup destinations

Destination	Description
BCM	For an immediate backup, saves backup archives to the hard drive of the BCM 5.0. You cannot specify a path. Each backup overwrites any preexisting backup.
My Computer	For an immediate backup, saves backup archives to any accessible location on the client PC with the BCM 5.0 Element Manager installed. You can specify a name for the backup, so that the system does not overwrite the preexisting backup.
Network Folder	Saves data to a shared network folder. The remote server must provide a Microsoft Windows-like shared file resource and a user account with rights to create and write files in the destination location. You cannot browse the network directories to select the destination folder, but you can specify a directory by identifying the path.
FTP Server	Saves backup archives to a File Transfer Protocol server. The system sends credentials and backup data without encryption. The remote server must provide an FTP server application and a user account with rights to allow the BCM 5.0 to create and write files in the destination location. You cannot browse the FTP server to select the destination folder, but you can specify a directory by identifying the path.

Copyright © 2009 Nortel Networks

Table 31 Backup destinations

Destination	Description
SFTP Server	Saves backup archives to an SFTP server. This method encrypts the logon credentials and the data in transit. You must set up the remote SFTP server to allow the BCM 5.0 to communicate with the SFTP server. When you set up an SFTP folder as a storage location on the network, you must use an SCP server. BCM 5.0 supports OpenSSH 3.7.
USB Storage Device	Saves backup archives to a USB storage device. The system writes the files to the top directory level. You cannot specify a path to a different directory on the storage device. Format the USB storage device as FAT32. There is an option to remove a timestamp in the backup file name. This results in the backup files overwriting the previous versions of the backup files on a USB storage device to avoid using all available space of the storage device until there is no more space to store a backup file.

Attention: For backup files greater than 2.0G, you must choose My Computer or an SFTP server as the backup destination.

Before you back up BCM 5.0 data, make sure that the BCM 5.0 has appropriate access to the shared resource on which you will store the data. You must configure full access permissions on the shared resource.

Restore optional components

You can select the components which you want to restore.

You can restore a backup to a different system; for example, to quickly bring a second system into service in a new installation. In this case, not all of the configuration information in the Configuration backup is relevant to the second system. You can select whether to restore device-specific configuration information, such as network settings. You may wish to exclude certain components from restoration. For example, you can exclude the network settings from a restore operation to avoid giving two machines on your network the same identity.

When you restore from a backup archive, you can check the level of the software update of the archive file. The softwarelevel.tar.gz file within the backup archive contains up to two text files: installedsoftware.txt and history.log. The installedsoftware.txt file is present at all times, while the history.log file is present only if software patches were applied to the BCM 5.0 or if a software upgrade was performed. The history.log file contains the

Copyright © 2009 Nortel Networks

update history of the BCM 5.0 at the time the backup archive was made. You can use this file to identify the software updates that you must apply to the target system before you perform the restore operation.

You should restore backup information only to another unit that has the same or later software release level. If a second unit has an earlier release level, you will need to apply the latest software updates to that system prior to applying the restore file.

The BCM 5.0 verifies that the software release level of the unit to which you want to apply the backup is consistent with the software release level of the backup file. If the BCM 5.0 detects a potential issue, the BCM Element Manager provides you with an error message.

Impact on system resources

A restore operation is a service-affecting operation. A number of services that run on the BCM 5.0 system stop and then restart after the data restores. The BCM 5.0 displays a reboot warning if any of the components selected for restoration require a system restart. The following table lists the effects of restoring optional components.

Table 32 Effects of a restore operation on the system

Component	Effect
Core Telephony	Service interruption.
IP Telephony	Service interruption.
Keycodes	Reboots the device.
Data Services and Network interfaces	Network interruption.
Security	Service interruption. Replaces SSL certificate.
CallPilot Messages	Service interruption. Existing voice messages are lost.
CallPilot Configuration	Service interruption. Existing voice messages are lost.
Media Services Manager	Service interruption.
Core Telephony	Service interruption.

Restore operations and logs

All backup and restore operations are logged. To view this activity, retrieve the Operational Logs and examine the file called archiver.systemlog.

Log management

This section provides information about log management on the BCM 5.0 system.

Copyright © 2009 Nortel Networks

Log management navigation

- Overview of BCM 5.0 logs (page 105)
- Log types (page 105)
- Transferring and extracting logs (page 107)
- Log Browser (page 109)
- Log Filtering and privacy (page 113)

Overview of BCM 5.0 logs

A log archive is a collection of individual log events generated by the BCM 5.0. An administrator can use log archives to monitor and analyze system behavior, user sessions, and events. You manage logs by transferring selected BCM 5.0 log archives from the BCM 5.0 to a specified location, such as your personal computer. You can then view individual log events using the Element Manager Log Browser or your usual text editor.

Attention: Depending on the privileges assigned to you, you may or may not see all the log files or processes described in this chapter.

In addition to the log files generated by the BCM 5.0 the Element Manager itself generates a log file. This log is found under the File selection of the Element Manager toolbar. This log contains diagnostic information. The BCM 5.0 manages log archives and maintains generations of information depending upon size or other criteria. Generations of log files have a numbered extension such as 3.gz. A generation of the alarms.systemlog file is created each time the BCM 5.0 is rebooted or when the log file reaches the 1 MB limit.

Attention: When you create a log archive, a high level of CPU usage may occur. This level of CPU is normal during a log management operation.

Log types

The BCM 5.0 logs are grouped in three categories:

- Operational logs
- Diagnostic logs
- Sensitive logs

Each log category contains one or more log files. A log transfer groups all selected categories into a common archive. The embedded categories have easily identified names and are accessible to utilities such as WinZip (MS-Windows) and tar (UNIX).

Copyright © 2009 Nortel Networks

When you transfer log archives, a set of additional log files is included in the log archive. These files are system information reports, which contain information about the system at the time of the log transfer.

Administrators have access to all log categories. Users who need only operational information have access to Operational and System Information logs.

Log type navigation

- Operational logs (page 106)
- Diagnostic logs (page 107)
- Sensitive logs (page 107)

Operational logs

Operational logs contain information about the BCM 5.0 system and its use, such as alarm information, configuration changes, and security information. Administrators and authorized users can access Operational logs and view them using the Log Browser.

Table 33Operational logs (page 106) lists the log files that belong to the Operational logs category.

Table 33 Operational logs

Log type	Log name	Description
Alarm log	alarms.systemlog	Records alarms that were written to the Element Manager alarm panel. Other possible alarms, if they cannot be viewed using the BCM 5.0 Element Manager, are logged in the alarms diagnostic log.
Configuration change	configchange.systemlog	Records Element Manager configuration data changes by user and time
Security log	security.systemlog	Records users logging in and out as well as locked out users
	psmtest.systemlog	Records Ethernet interface activity and hard drive
	psmOMS.systemlog	Records platform status, such as operational
Archive log	archiver.systemlog	Records backup, restore, and log management activity
Activity log	MonitGuard.systemlog	Records MonitGuard activity, an application that monitors main BCM services and applications.
	psmtest.systemlog	Records Ethernet interface activity and hard drive partitions.

Copyright © 2009 Nortel Networks

Diagnostic logs

Diagnostic logs contain the log files generated by the BCM 5.0 software components. These log files are required only if additional system information is requested by Nortel Technical Support to help diagnose a BCM 5.0 issue. Only an administrator can access Diagnostic logs.

Sensitive logs

Sensitive logs may contain sensitive customer information, such as personal identification numbers or bank account and credit card numbers. Users may enter sensitive information using their telephone sets, for example when performing telephone banking.

Sensitive logs are grouped in a separate category to allow the administrator to decide whether to include this category of log files in a log file transfer, depending on the nature of the connection being used for the transfer. Administrators may choose to exclude Sensitive logs when the network or the destination is not sufficiently secure or when there are other privacy or security concerns.

The Sensitive Logs category includes only three log files for core telephony, LAN CTE, and Voice CTI.

Attention: The Sensitive Logs category can become very large due to the large core telephony log files.

Attention: Once logs are transferred to an external location, the administrator is responsible for securing the information and controlling access to it.

Additional system information

A set of System Information files is included with every log file transfer. These are reports rather than log files, and contain a snapshot of operating state of the BCM 5.0 system at the time of the log file transfer. These reports are automatically collected and included with every log file transfer.

The files included in this category are .txt files. You can open these files with an application such as Word Pad or Microsoft Word, but you cannot open or view them using the Element Manager Log Browser. Nortel recommends Word Pad, since this application retains the column structure of the logs.

Transferring and extracting logs

Using the BCM 5.0 Element Manager, you can transfer log files by using:

- an immediate log transfer
- a scheduled log transfer

Copyright © 2009 Nortel Networks

You can create, modify, or delete a scheduled log transfer.

You can transfer log files to the following destinations:

- a USB storage device
- your personal computer
- a network folder
- an FTP server
- an SFTP server for secure file transfer

Log archives transferred to servers and the USB device are named with a Log_ prefix. The system name of the BCM 5.0 and the date/time are appended to the prefix. An example filename is Log_acme_20050708T101604.tar.

When you transfer log files to the computer on which your Element Manager is installed, the default location for the Logs folder is \BCM 5.0ElementManager\files\logs\. You may wish to create a folder within this folder for each BCM you are managing, so that log files from a particular BCM 5.0 can always be transferred to the associated log file folder on your computer.

When you are transferring the log archive to your personal computer, you may also wish to save the log archive file using the system name and date as part of the file name. This will simplify the task of locating the tar file later. For example, you may wish to save the tar file as “Log_acme20050315.tar”.

You use the BCM 5.0 Element Manager to transfer log files from the BCM 5.0 to an external location. You must transfer the log files to an external device before you can view them. If you are using the BCM 5.0 Element Manager Log Browser to view the logs, you will also have to extract the log files from the log archive that is transferred from the BCM 5.0. The log archive contains a collection of log files.

When you transfer the log archives to another device, you can specify:

- the location to which you want to transfer log files, such as your personal computer or a network folder
- the category of logs you want to transfer, such as Sensitive Information logs
- a schedule for a log file transfer

You can also transfer log files using the BCM 5.0 Web page if you cannot access the BCM 5.0 Element Manager. In this case log files of all categories (operational, diagnostics and sensitive) is transferred.

Copyright © 2009 Nortel Networks

After you transfer the log archives, several options are available to you for extracting the log file information and for viewing the log files. If you are using the BCM 5.0 Element Manager (recommended), the Log Browser prompts you to extract the actual log files from the .tar file. If you prefer, you can use the WinZip application to expand the .tar file into its included log files. As an alternative to using the Element Manager Log Browser, you can use an application such as WordPad to view the log files.

Using the BCM 5.0 Element Manager Log Browser to view extracted log files gives you the ability to view information in a way that suits you; for example, you can filter and sort information according to priority, time, message, and so on.

Log Browser

The Log Browser is an application that you can use to search for and view information about log events from different types of data sources. You can determine what type of information you want to see and customize how you want to display the information.

Copyright © 2009 Nortel Networks

Log Browser navigation

- Log Browser overview (page 110)
- Retrieval Criteria area (page 110)
- Retrieval Results list (page 112)
- Log Details area (page 113)

Log Browser overview

You can view the following log files using the Element Manager Log Browser:

- all log files of type .systemlog
- most log files of type .log
- log files of type .txt or other file extensions that cannot be viewed using the Log Browser

You can use an application such as WordPad or Microsoft Word to view log files that you cannot view using the Log Browser.

Table 34Log files and the Log Browser (page 110) lists the log files that you can view using the Log Browser.

Table 34 Log files and the Log Browser

Log File	Can be viewed in the Log Browser?
Operational logs (.systemlog)	Yes
Diagnostic logs	Some can
System Information	No
Sensitive Information	No

The Log Browser contains the following areas:

- Retrieval Criteria area
- Retrieval Results list
- Log Details area

Retrieval Criteria area

The Retrieval Criteria area at the top of the Log Browser window displays a list of network element and alarm attributes that you can use to define the criteria for browsing a selected log file.

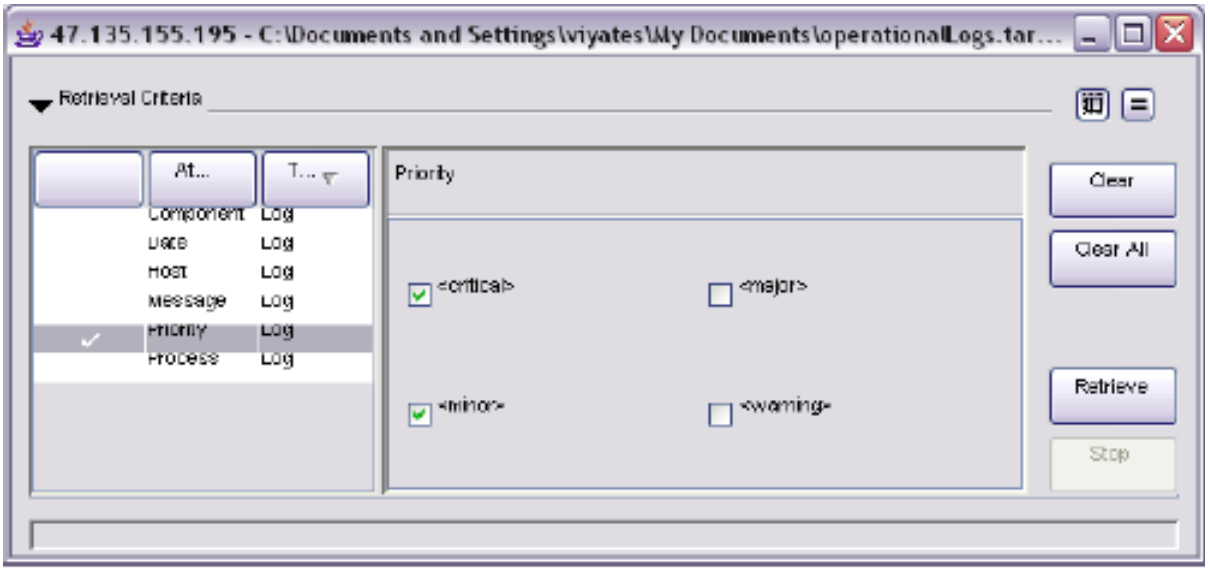
You can display or close the Retrieval Criteria area by clicking on the arrow to the right of the Retrieval Criteria field.

Copyright © 2009 Nortel Networks

Retrieval criteria area specific to the log file that you are viewing. For example, .log files with four columns have four possible retrieval criteria, while .systemlog files with six columns have six possible retrieval criteria. You can define the criteria for browsing log files by selecting or deselecting criteria.

When you select an attribute from the Retrieval Criteria table, the Criteria Definition area to the right of the table displays the corresponding details for the attribute you selected. You can select or define the corresponding details.

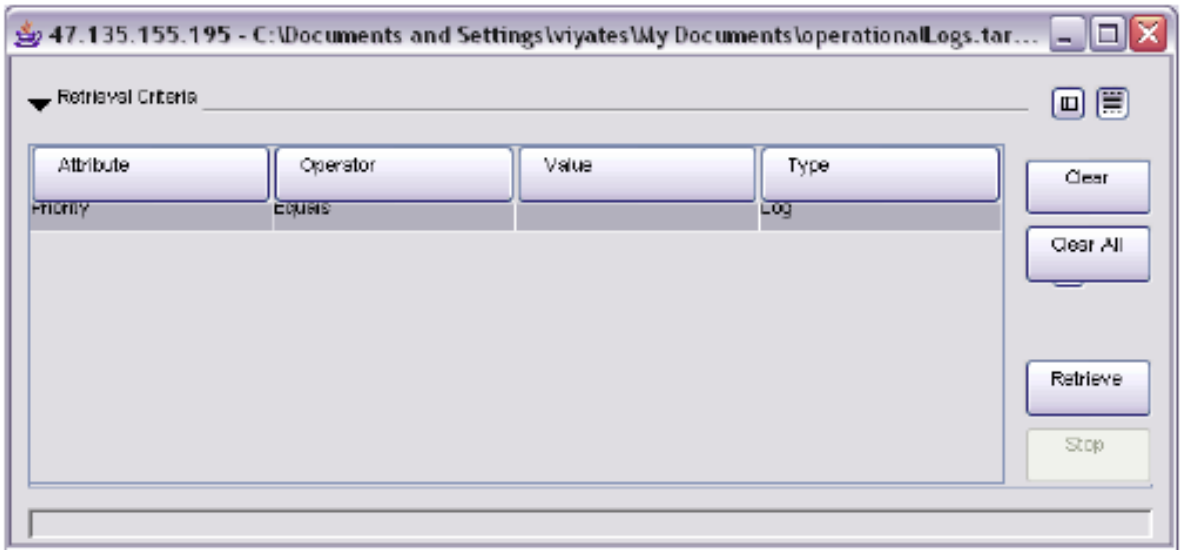
Figure 18 Criteria Definition area



You can click the Pane View buttons at the top right corner of the Retrieval Criteria area to display a summary view of your selected criteria. This allows you to review selected criteria before you retrieve the logs.

Copyright © 2009 Nortel Networks

Figure 19 View selected criteria



After you select an attribute, you can click the Clear button to remove it from the summary list, click the Clear All button to remove selected attributes, or click the Retrieve button to initiate a retrieval of log files according to the criteria you defined in the Retrieval Criteria area.

Retrieval Results list

The Retrieval Results area displays the list of log information that was retrieved according the criteria you selected in the Retrieval Criteria area. The information is displayed in a table that you can sort by clicking column headings.

While the Log Browser is retrieving records, you can monitor the progress of the retrieval by following the progress counter. This counter also displays the elapsed time and the number of records found. You can stop the retrieval by clicking the Stop button.

The Log Browser displays all the records it has found, to a set maximum display limit. The maximum display limit is 3000 records. Most log files exceed this limit; when this happens, you cannot view the remaining records in the log file. If this is the case, try using filter criteria for a specific date or dates to reduce the number of results.

You can sort the contents of the table by clicking the headings in the table. You can view details about a log record by selecting a log record or multiple log records in the Retrieval Results area.

To filter information displayed in the Retrieval Results table, you can select or clear the check boxes in the Show area below the Retrieval Results table. You can filter the results by alarm severity: Debug, Info, Warn, or Error.

Copyright © 2009 Nortel Networks

Log Details area

The Log Details area located below the Retrieval Results list displays the details for a selected log record or multiple log records.

Log Filtering and privacy

This feature provides BCM administrators with additional filtering of logging levels for components descried below.

The following logging categories exist on the BCM:

- Operational — The operational logs category contains administrative and audit logs similar to earlier BCM releases.
- Sensitive — The sensitive logs category contains log records that contains customer information.
- Diagnostic — Nortel support uses diagnostic logs are to troubleshoot and diagnose problems in the BCM software.

All logs on the BCM are mapped into one of these categories.

The log filtering feature allows you to modify the logging levels of components from the sensitive and diagnostic logs. The logging levels by default is ALL, but the filter can be set to:

- Error
- Warning
- Debug

To ensure privacy, the Business Element Manager retrieves any sensitive or diagnostic logs in an encrypted format. For more information about log filtering, see Selecting log filters (page 196).

Hardware Inventory

This section provides information about Hardware Inventory on BCM450 and BCM50 systems.

The BCM 5.0 Hardware Inventory panel provides information about the BCM450 and BCM50 physical system. the Main Hardware Inventory panel has the following tabs:

- BCM System — Provides information about the key components of the BCM 5.0. For BCM50 systems, this tab provides information about both expansion modules, and installed Media Bay Modules (MBM), as well as any installed daughter cards (BRI or Router). For BCM450 systems, this tab shows information about any installed expansion daughter cards (CEC card), installed MBMs, and the expansion chassis (if applicable).

Copyright © 2009 Nortel Networks

- Devices — Provides information about any non-BCM 5.0 components connected to the system.
- Additional Information — Provides manufacturer details about the BCM 5.0.

You can view or add information about certain devices, such as an asset ID and location information, to facilitate tracking of the BCM 5.0 Hardware Inventory in asset management systems. BCM system tab has Digital Mobility Controller (DMC) table added.

You can view the information in the Hardware Inventory remotely, using Simple Network Management Protocol (SNMP) management systems and the Entity Management Information Base (MIB), RFC2737.

Software updates and software inventory

During the lifecycle of the BCM 5.0, you can apply software updates to the BCM 5.0 unit to resolve or prevent field issues. Software updates are applied in the same manner as major release software upgrades. Both software upgrades and software updates are applied in the same manner. Using the BCM 5.0, you can:

- obtain software updates from different storage locations, such as an FTP site or USB storage device
- view the software upgrade and update history of the BCM 5.0
- apply and, in some cases, remove software updates
- view the software inventory of the BCM 5.0
- apply software updates at a scheduled time

BCM 5.0 software is organized into software components that you can individually update as required. The version of each software component is tracked so that you can determine the exact software release level of a BCM 5.0 to the component level. You can view the complete inventory of software installed on the BCM 5.0. The Software Inventory table displays all the software components installed on the system, the functional group and the software version of each component.

BCM 5.0 utilities

This section contains information about the utilities that are part of the Element Manager. These utilities provide information about the BCM 5.0 system, so that you can monitor and analyze system status and performance. The BCM 5.0 utilities are:

- Ping
- Trace Route

Copyright © 2009 Nortel Networks

- Ethernet Activity
- Reset
- Reboot
- Diagnostic Settings
- IP Set Port Details
- Packet Capture

For information about the BCM Monitor utility, also available through Element Manager, see BCM Monitor (page 119).

Ping

Ping (Packet InterNet Groper) is a utility that you can use to verify that a route exists between the BCM 5.0 and another device. Ping sends an ICMP (Internet Control Message Protocol) echo request message to a host. It expects an ICMP echo reply, which you can use to measure the round-trip time to the selected host. You can measure the percent packet loss for a route by sending repeated ICMP echo request messages.

Attention: Establishing a PPP link over a modem make take some time. If the Ping utility times out before the modem call can be established, click the Ping button again.

Trace Route

You can use Trace Route to measure round-trip times to all hops along a route. This helps you to identify bottlenecks in the network. Trace Route uses the IP time-to-live (TTL) parameter to determine router hops to a specific IP address. A router must not forward an IP packet with a TTL value of 0 or 1. Instead, a router discards the packet and returns to the originating IP address an ICMP time exceeded message.

Trace Route sends an IP datagram with a TTL of 1 to the selected destination host. The first router to handle the datagram sends back a time exceeded message. This message identifies the first router on the route. Trace Route then transmits a datagram with a TTL of 2.

The second router on the route returns a time exceeded message until all hops are identified. The Trace Route IP datagram has a UDP Port number not likely to be in use at the destination (normally greater than 30 000). The destination returns a port unreachable ICMP packet. The destination host is identified.

Copyright © 2009 Nortel Networks

Ethernet Activity

The Ethernet Activity panel is a utility that you can use to view ethernet activity in the BCM 5.0 system.

Reset

You can use the Reset utility to:

- perform a warm reset of telephony services
- perform a cold reset of telephony services

You can also perform a Configuration Reset, which will restore the configuration settings to factory default, or a Software Reset which will restore both the software and configuration settings to factory default. For more information on Configuration and Software resets, see Maintenance CLI (page 243).

The following table lists the Reset functions.

Table 35 Reset functions

Function	Description	Impact
Warm Reset Telephony Services	Restarts telephony services running on the BCM 5.0 system	Restarts all telephony services, including LAN CTE, voice mail, and IP telephony. This operation does not affect configuration parameters or programming.
Cold Reset Telephony Services	Resets telephony programming of the BCM 5.0 system to the factory defaults for that software level	Affects all telephony services, including LAN CTE, voice mail, and IP telephony. Telephony services restart with all telephony programming at default values for the specified region, template, and start DN, for the current software release level. A cold reset erases voice message mailboxes and messages if the DN length is not set to system defaults. For information about setting the DN length, refer to the BCM 5.0 Device Configuration Guide.

Reboot

You can use the Reboot utility to:

- reboot the BCM 5.0 system
- shut down the system

Copyright © 2009 Nortel Networks

- reboot the integrated router (BCM50a/e only)
- create a scheduled reboot to take place at a specified time. This can be configured to occur once, daily, weekly or monthly.

The following table lists the Reboot functions.

Table 36 Reboot functions

Function	Description	Impact
Reboot BCM 5.0 System	Restarts the operating system of the BCM 5.0 system.	Temporarily stops all services on the system. Restarts all services. This operation does not affect configuration parameters or programming.
System Shutdown	Shuts down the BCM 5.0.	Stops all services in preparation for removing power from the system.
Add (Scheduled Reboot tab)	Allows you to create a new Scheduled Reboot.	

Diagnostic Settings

Diagnostic settings is a utility that allows you to determine the level of system reporting you require for released ISDN or VoIP calls. You can choose to have no text, a simple explanation, or a detailed explanation.

IP Set Port Details

The IP Set Port Details panel displays the settings for the physical ports that the IP sets connect to on the media bay modules.

The following table lists the fields on the IP Set Port Details panel.

Table 37 Reset functions

Variable	Description
Port	The port number of the physical device.
DN	Each port supports one telephone, hence, one DN record.
Device type	The type of module.

Copyright © 2009 Nortel Networks

Table 37 Reset functions

Variable	Description
State	This field indicates whether a module line or DN is in use or even provisioned. States are: Idle Active Deprovisioned
Addon	
Addon	Indicates auxiliary items added to the telephony devices or trunks. This is a list number.
Type	This field indicates the type of add-on, such as a KIM module.
Version	This field indicates the version of firmware running on the add-on device.

LAN IP Packet Capture

You can initiate IP packets capture on the BCM LAN and store captured IP packets in the output file on BCM filesystem or a USB flash drive. LAN IP Packet Capture is accessed through Business Element Manager at **Administration > Utilities > LAN IP Packet Capture**. Packets can be captured at the OAM port or any of the LAN ports.

On the Configuration tab, you can select to store the output file on a network drive, a USB flash drive, or on the BCM system. The configuration options will change depending on where you want to store the output file.

The Filters tab allows you to set filters to reduce or increase the amount of data captured.

The following table lists the fields on the LAN IP Packet Capture panel.

Copyright © 2009 Nortel Networks

Table 38 Reset functions

Variable	Description
Port	The port you want to capture from. If LAN is selected, all LAN ports will be captured.
Mode	Promiscuous: gives IP Packet Capture access to all packets on the LAN. Non-promiscuous: gives IP Packet Capture access only to packets coming to or from the BCM.
Output format	Allows you to select the output format. The options are: Raw: The raw packet data. Text: converts the data to a text file.
Duration (sec)	: The duration (in seconds) of the capture.
Start	Starts the capture
Stop	Stops the capture
Status	View the status of the capture

IP packets going to WAN port will not be captured if entering one of the router ports regardless of Promiscuous mode state. Any packets entering any of the LAN ports will always be captured if promiscuous mode is ON.

Attention: If you are using a USB flash drive and it is disconnected during the capture, the capture session does not stop. Stop the capture manually before disconnecting the USB drive.

BCM Monitor

BCM Monitor is a stand-alone diagnostic application that the system administrator uses to view real-time system and IP telephony information about BCM 5.0 systems.

BCM Monitor is included with the installation of the Element Manager. You do not need to download the utility, unless you are an administrative user who requires access to only this management tool, and you do not have or require the Element Manager.

Using BCM Monitor, you can monitor the following:

- overall system status

Copyright © 2009 Nortel Networks

- IP telephony functions of the BCM 5.0 system, including IP device activity and VoIP session information
- utilization of resources
- operation of telephony applications (for example, Voice Mail and Contact Center)
- lines
- PRI, BRI, and IP trunks

The following operating systems support BCM Monitor:

- Windows Vista (Business, Ultimate, and Enterprise SP2 32-bit, 64-bit)
- Windows XP
- Windows XP Professional SP3

You use BCM Monitor from a remote PC that has IP connectivity to the monitored system. You can open multiple instances of BCM Monitor on a single PC to monitor several remote BCM 5.0 systems at the same time.

When BCM Monitor connects to a BCM system that does not support a particular information element, this is indicated by “N/A” in the relevant BCM Monitor panes.

BCM Monitor does not require significant hard disk space or memory on the client PC.

System Administrators and support personnel can use BCM Monitor to obtain real-time troubleshooting data about the BCM system and to save data to generate system utilization and traffic reports.

BCM Monitor—BCM Info tab

The BCM Info tab displays static information about the BCM 5.0 system, such as

- information about the main hardware components of the BCM 5.0 system
- software installed on the system
- IP configuration data

You can use the information on this tab to verify the software release level of the BCM 5.0, the published IP address and default gateway of the BCM 5.0 main unit, the last time the BCM 5.0 was rebooted, as well as IP address information about other Ethernet interfaces on the BCM 5.0 main unit.

The installed devices on the BCM 5.0 Info tab appear as follows:

- NIC: eth0 — indicates a LAN internal to the BCM 5.0 system.

Copyright © 2009 Nortel Networks

- NIC: eth1 — indicates a LAN accessible to the customer through ports 1, 2, and 3 on the front panel of the BCM 5.0 main unit.
- NIC: eth2 — OAM LAN: a dedicated OAM port accessible as port 0, the leftmost Ethernet port on the front panel of the BCM 5.0 main unit

BCM Monitor—Media Card tab

The Media Card tab provides information about the telephony system of the BCM 5.0. This tab provides the following information for a BCM 5.0:

- the hardware of the BCM 5.0 main unit on which the telephony software resides
- the telephony software component release level and market profile
- configuration information, such as media channels (64 kbits/s B channels), and the total number of logical DSP resource units
- the available tasks and tasks in service

The Media Card tab provides the following information for BCM systems:

- Media Card hardware, including type and revision, and voice bus channels
- Media Card firmware, including core load and market profile
- configuration information, such as DS30 configuration, dialup WAN, media channels (64 kbits/s B channels), signaling channels (D channels), processor expansion cards, and the total number of logical DSP resource units
- multiple DSPs (single DSP for BCM50 systems) and the tasks that are available and in-service for each

BCM Monitor—Voice Ports tab

The Voice Ports tab displays real-time information about configured voice ports. A configured voice port is a logical device used for voice mail, and Contact Center. Values associated with voice ports change with the usage of the switch, and are therefore well suited for dynamic logging to view trends relating to system activity.

You can use the Voice Ports tab to view the following information:

- information about voice ports used by the Voice CTI services, such as the resource limit and how many voice CTI ports are enabled and assigned
- how many Voice CTI ports are assigned to Contact Center and voice mail
- how many assigned ports are currently active, and the DN of the user assigned to the port
- voice port details, which show information about activity on each enabled voice port

Copyright © 2009 Nortel Networks

BCM Monitor—IP Devices tab

The IP Devices tab displays information about call activity associated with IP sets, wireless sets, and IP trunks. IP sets include IP clients (for example, the i2050 softphone), i200x IP sets, and wireless sets.

The IP Devices tab shows how many sets in each category are enabled, connected, and active. The tab displays the DN, IP address, and type of set for each active call.

BCM Monitor—RTP Sessions tab

The RTP Sessions tab displays information about Real Time Protocol (RTP) over UDP sessions, which involve either the BCM 5.0 system or an IP set controlled by the BCM 5.0 system.

You can use the information in this tab to monitor the direct path between two IP sets.

The tab displays information about

- local IP endpoints (two sets both connected to the BCM 5.0)
  - — combinations of IP to IP, TDM to IP, and TDM to TDM
  - — an estimate of network traffic generated by RTP sessions between TDM devices or local IP devices
- local to remote IP endpoints
  - — combinations of IP to IP, TDM to IP
  - — an estimate of network traffic generated by RTP sessions
- remote IP endpoints (IP to IP)
  - — an estimate of network traffic generated by RTP sessions between remote IP endpoints
- the number of allocated media gateways that are providing a connection between a TDM device and an IP endpoint

The RTP Sessions tab also displays detailed information about active RTP sessions. The RTP Session Details area displays the following line for each active session:

```
IP Endpoint A}{IP Trunk X}<stream info>{IP Trunk Y}{IP
Endpoint B} Codec FPP Details
```

The IP Endpoint tokens contain information about each IP endpoint (type, DN, IP address, RTP port number). The IP Trunk tokens contain information about the IP Trunk used by each endpoint (if no trunk is used, the token is omitted). The Stream Info token shows which RTP streams are enabled between the

Copyright © 2009 Nortel Networks

two endpoints. The Codec token describes the codec type used for the RTP session. The FPP shows the negotiated value of frames per packet. The Details token shows additional information about the RTP session.

BCM Monitor can display real-time RTP session statistics for sessions that involve at least one media gateway. These statistics include information about duration of the session, the number of bytes and packets sent or received per second and per session. You can use these statistics for troubleshooting packet loss or routing problems.

BCM Monitor—UIP tab

The UIP tab displays information about Universal ISDN Protocol (UIP) activity associated with IP trunks (MCDN messages), BRI loops, and PRI loops on the BCM 5.0.

You can monitor UIP modules by:

- enabling or disabling monitoring of MCDN over IP messages for calls made over IP trunks
- selecting and configuring a bus used by expansion modules
- selecting the type of ISDN module connected to the expansion unit
- enabling or disabling monitoring of loops on BRI modules connected to the expansion unit

UIP message details

The Universal ISDN Protocol Messages section displays a folder for each UIP module that you enable for monitoring. Each folder displays up to 20 most recent UIP messages. You can expand UIP messages that contain at least one information element. An information element can contain data, which you can expand as well.

Each UIP message line contains the following information:

- the direction in relation to the BCM 5.0 (> for incoming or < for outgoing)
- the message type (CC for Call Control, MTC for Maintenance)
- the direction in relation to the call reference origin (> Cref Origin for incoming or < CRef Origin for outgoing)
- the message name (or a hexadecimal value if the name is unknown)
- additional data extracted from information elements

BCM Monitor—Line Monitor tab

The Line Monitor tab shows the status of lines on the BCM 5.0 system. You can view the number of active lines, and view all lines on the BCM 5.0 system, including inactive lines.

Copyright © 2009 Nortel Networks

For all lines displayed in the line monitor area, you can view the following information:

- direction — “Outgoing” indicates that the call originated from the BCM 5.0; “Incoming” indicates that the call originated from outside and is directed at the BCM 5.0
- start time — displays the time and date on which the call started
- user — displays the DN and name of the BCM 5.0 user
- state — displays “Idle” if there is no active call on the line; displays “Dialing” if the BCM 5.0 user is in the process of dialing digits to place a call; displays “Alerting” if a call has been received on the line and a BCM 5.0 user’s phone is ringing; displays “Connected” if the line has a connected call; displays “Held” if the line has a call on hold.
- duration — displays the duration of the call
- number and name — displays the line number and line name

In the line monitor area, colors are used to indicate the state of each line:

- gray represents lines that are idle
- blue represents lines that are active
- red represents lines that are alerting
- dark red represents lines that are on hold

BCM Monitor—Usage Indicators tab

The Usage Indicators tab displays real-time information about the BCM 5.0 system.

The tab displays the following information:

- BCM 5.0 system data, including CPU and memory use
- resources used on the Media Card, including signaling channels, media channels, voice bus channels, and DSP resources
- active telephony devices, such as IP trunks, IP sets, voice ports, and media gateways

The information is displayed as an absolute figure and as a percentage of the resource used. You can capture a static snapshot of this information or log it dynamically.

Usage values

The Usage Indicators tab can show high CPU usage occurring on the BCM 5.0. When you create backup archives or log archives, a high level of CPU usage can occur. This level of CPU usage is normal during backup and log management operations.

Copyright © 2009 Nortel Networks

Usage values are accompanied by a colored bar. The following table describes the usage value indicators and recommended actions.

Table 39 Usage value indicators

Indicator color	Indicator meaning	Recommended action
Green	Usage values are normal.	None.
Yellow	Potential resource problem.	Further investigation is recommended if an indicator remains yellow for an extended period.
Red	Critical resource problem.	Further investigation is recommended if an indicator remains red for more than a few seconds.

Statistical values

BCM Monitor stores the minimum and maximum values for many of the statistics that appear on BCM Monitor tabs. A statistic must be a numeric value and must change over time; that is, the value cannot be a static value. Examples of statistics that have minimum and maximum values are CPU usage, Active Lines, and Enabled i20XX sets. Examples of statistics that do not have minimum and maximum values are Dial-up WAN (which is not a numeric value) and Serial Number (which is static).

The values that BCM Monitor displays are the minimum and maximum values for the current BCM Monitor session. The minimum and maximum values are reset when you exit the BCM Monitor.

The three values remain on the Status bar until you select another value. These values also continue to change as the value for the selected statistic changes. Use this if you want to monitor a single statistic on one panel while you are viewing the information on another panel.

When BCM Monitor stores the minimum and maximum value, it also stores the date and time when the minimum or maximum occur.

You can do the following with statistical values:

- view minimum and maximum values
- view the date and time of minimum and maximum values
- reset minimum and maximum values

Auto-Administration Management

This section provides information about the Auto-Administration Management feature for BCM 5.0.

Copyright © 2009 Nortel Networks

Auto-Administration Management feature supports software patching by automated software update using USB and network interfaces. This feature also supports keycode distribution in addition to software patching.

You can enable the Auto-Administration feature to accept any Auto-Administration Management packages. For more information on how to enable Auto-Administration Management feature, see Enabling Auto-Administration Management feature (page 228)

The Auto-Administration Management feature uses an Auto-Administration Management package, which has an authenticated control file and an optional signed package. The control file describes the purpose of the package and the signed package contains the data the authenticated control file requires. The integrated management tool signs the software package and the control file.

The Auto-Administration Management package is created with a create package certificate and validated with the corresponding validation certificate. The BCM 5.0 release installs a default validation certificate on all BCMs. Using Auto-Administration Management tool, you can create your own validation certificate and corresponding package creation certificate. After creating the certificates, you can upload the validation certificates to the multiple BCMs.

Attention: If you remove default validation certificate, you can recover it only through a level 1 reset.

Attention: While generating the packages using the Auto-Administration Management tool, you must make sure the package creation certificate matches the validation certificate installed on the BCM.

Scheduling

You can schedule Auto-Administration Management operations. The scheduling options are on an exact time, or reoccurring on a daily, weekly or monthly basis. For non-reoccurring operations, if the time of schedule is after the current time of the BCM, the patch starts immediately.

Attention: The reoccurring scheduling option is available only with fetch patch and keycode from a storage location.

Auto-Administration Management operations

Operations performed by the Auto-Administration Management feature are:

- fetching a patch or keycode from a storage location

Copyright © 2009 Nortel Networks

- installing a patch or keycode file using the USB interface
- installing patch or keycode using the network interface

The following table summarizes fetch and push operations available to different sources.

Table 40 Fetch and push operations

Source	Fetch patch	Fetch keycode	Push patch	Push keycode
USB drive			✓	✓
FTP	✓	✓		
HTTP	✓	✓		
HTTPs	✓	✓		
Network or computer			✓	✓

Fetching a patch or keycode from a storage location

You can fetch a patch from a specified storage location. Storage locations include FTP, HTTP, or HTTPs.

You can fetch a patch from a storage location by the following two methods:

- Using the Business Element Manger and scheduling an auto-administration operation.
- Creating a control file using the Auto-Administration Management tool, which schedules the operation on a single or multiple BCMs from a centralized location.

In both the cases, Auto-Administration Management feature connects to the specified storage location and looks for "**aprequest.xml**" control file and perform the specified operation.

Installing a patch or keycode file using the USB interface

For the USB interface, the signed control file and the signed package must both be located on the USB device. After inserting the device, Auto-Administration Management software validates the signed control file and the signed package. After passing validation, the Auto-Administration Management software copies the control file and the software package off of the USB device for applying the patch. You can schedule the operation to be immediate or at a scheduled time. For scheduled time operation, the system copies the files off the USB device and completes the operation at the scheduled time.

Copyright © 2009 Nortel Networks

The USB Auto-Administration Management process changes the BCM status LEDs to indicate the USB activity.

Attention: If the LED status is yellow, do not remove the USB. If the LED status is green, it is safe to remove the USB.

Installing patch or keycode using the network interface

You can push the Auto-Administration Management packages to multiple BCMs through a network. This mechanism updates multiple BCMs in parallel.

For network Auto-Administration Management operations, you can create a control file and a signed package. After the control file and signed package is ready, upload the content to the BCM. You can upload the package using the Business Element Manager or using HTTP, HTTPs, FTP or a connected computer. You can schedule the operation to be immediate or at a specified time. For the scheduled time operation, the Auto-Administration Management software temporarily stores the files and executes the operation at the scheduled time. If both the control file and signed package is valid, the Auto-Administration Management software executes the control file and the payload data. You can view the progress of the patching process on the Business Element Manager using the software updates panel.

USB keycode installation

For BCM 5.0, Telset keycode entry is removed. You can store a keycode file on a USB device and automatically apply it without login to the Business Element Manager. The keycode auto apply process does not require an Auto-Administration Management package. Enabling or disabling of the Auto-Administration Management feature does not affect the process.

The keycode file name contains System ID number and is unique to every system. The BCM selects the right keycode based on the file name and then installs it.

Status and error handling

Any error condition during the initial processing of the Auto-Administration Management package terminates the process. The interface returns an error code and raises an alarm for the error. For successful patch, a log entry is added into the auto-patching server log files.

For information on alarm codes, refer to *Nortel Business Communications Manager 5.0 Alarm Reference* (NN40170-702)

Service management system

This section describes how to view and administer the services that run on the BCM 5.0 system.

Copyright © 2009 Nortel Networks

You can view details about the services that run on the BCM 5.0 system, including:

- the name of a service
- whether a service is enabled to automatically start up
- the status of the service running on the BCM 5.0

You can also administer services by starting, stopping, and restarting certain services.

Attention: Use the BCM 5.0 Services Manager only as directed by Nortel Technical Support. Improper use of the BCM 5.0 Services Manager may adversely affect system operation.

Service name	Description
ActRptProviderAgent	
BCMClipPasswordFlush	
BCMSetTemplateProviderAgent	
BCMWebProviderAgent	Cimom Provider
BCM_Doorphone	Doorphone Service
BCM_LicenseProviderAgent	Cimom Provider
BCM_NATDialinProviderAgent	
BackupRestoreProviderAgent	Cimom Provider
BriSW	BRI software
CCRSAppServer	
CDRService	Call Detail Recording Service
Core Tel	Core Telephony
Cte	Computer Telephony Engine
DHCPProviderAgent	Cimom Provider
DiaLogger	System Logging Mechanism
Echo Server	echo service
HGMetrics Reporter	Hunt Group Metrics
IpTelProviderAgent	Cimom Provider
LANProviderAgent	Cimom Provider
Msm	Media Services Manager
MsmProviderAgent	Cimom Provider
NnuScheduler	System Scheduler

Copyright © 2009 Nortel Networks

Service name	Description
OneButton Text	
Pdrd	Persistence Data Repository Service
SoftwareUpdateProviderAgent	Cimom Provider
SyslogListener	Syslog Receiver
UftpServer	UFTP Server
WANFailoverProvider Agent	Cimom Provider
WANServiceMgr	WAN Service
apcupsd	
btraceserver	Plug-in for Authentication and Routing Management for BT
core_file_monitor	core file monitoring service
crond	Cron Scheduler
cti server	CTI service
feps	Functional Endpoint Proxy Server (VoIP Gateway)
httpd	HTTP Daemon
lms	Line Monitor Server
mgs	Media Gateway Server
mib2agt	MIB II service
modemcc	modem service
mps	IP Telephony—Media Path
owcimomd	Open Wbem Cimom Server Daemon
psm	—
qmond	QoS Monitor
securityservice	Authentication and Authorization
srg (BCM50 only)	SRG service
ssba	System Set Based Admin Service (Feature 9*8)
sshd	Secure Shell Daemon
tmwservice	Time Service
utps	UniSTIM Terminal Proxy Server (IP Sets)
voicemail	Voicemail Process

Copyright © 2009 Nortel Networks

SNMP MIBs

A Management Information Base (MIB) is a virtual information store that contains a collection of objects that are managed using Simple Network Management Protocol (SNMP). The MIB is software that defines the data reported by a computing or network device and the extent of control over that device.

A MIB enables access to the managed objects of a system. MIBs are managed using a network management protocol, such as Simple Network Management Protocol (SNMP).

BCM 5.0 supports the following MIBs:

- MIB-II (RFC1213)
- SNMP-FRAMEWORK-MIB (RFC2261)
- ENTITY-MIB (RFC273)
- HOST-MIB (RFC2790)
- IF-MIB (RFC2863)
- SNMPv2-MIB
- IANAifType-MIB
- BCM Small Site Common MIB
- BCM Small Site Events MIB

BCM50 units equipped with an integrated router (BCM50e, BCM50a, BCM50be, and BCM50ba) also support RFC 1231 — MIB-II and a private MIB.

You can use BCM MIBs to monitor the network element; you cannot use BCM MIBs to configure the element. Read-only access is provided for all supported MIB objects.

MIB file descriptions

BCM MIBs belong to two categories:

- Standard MIBs — include MIB-II (RFC1213), SNMP-FRAMEWORK-MIB (RFC2261), ENTITY-MIB (RFC273), HOST-MIB (RFC2790), IF-MIB (RFC2863), SNMPv2-MIB, and IANAifType-MIB
- Nortel MIBs — include BCM Small Site MIB and BCM Small Site Events MIB

Copyright © 2009 Nortel Networks

The following table lists the file names and file descriptions of each supported standard MIB.

Table 41 MIB file descriptions for standard MIBs

MIB	File name	Notes
MIB-II	rfc1213-mib.mib	This MIB defines the Management Information Base (MIB-II) for use with network management protocols in TCP/IP-based internets.
SNMP-FRAMEWORK-MIB	snmp-framework-mib.mib	This is the SNMP Management Architecture MIB. This standard MIB displays parameters related to the SNMP agent on the BCM.
ENTITY-MIB	entity-mib.mib	This MIB defines physical and logical system components on the BCM and associations between these components.
HOST-MIB	host-resources-mib.mib	This MIB is used to manage host systems. It is useful for monitoring resource usage and system performance.
IF-MIB	if-mib.mib	This MIB describes generic objects for network interface sub-layers.
SNMPv2-MIB	snmpv2-mib.mib	This MIB defines basic SMI types and structures used by other MIBs.
IANAifType-MIB	ianaiftype-mib.mib	This MIB defines types which are used by IF-MIB.

Copyright © 2009 Nortel Networks

The following table lists the file names and file descriptions of each supported Nortel MIB.

Table 42 MIB file descriptions for Nortel MIBs

MIB	File name	Notes
Small Site MIB	smallsite-common-mib.mib	This MIB defines the upper-level hierarchy of an enterprise(1).nortel(562) sub-branch called smallsite. This Nortel MIB is the basis for several Nortel smallsite products. In the BCM50, this MIB is a prerequisite for the Small Site Events MIB.
Small Site Events MIB	smallsite-events-mib.mib	This MIB defines the events (traps) that the Small Site product or component can use. This MIB describes the events generated by the BCM. This MIB contains fields such as eventId, eventSource, eventTime, and EventDescr.

The device sysObjectIDs are defined in the BCM Small Site Common MIB. The sysObjectIDs are defined for the BCM50 main unit. The following table summarizes the sysObjectID assignments.

Table 43 sysObjectID assignments

Model	Main Unit sysObjectID	Integrated Router sysObjectID
BCM450	1.3.6.1.4.1.562.37.1.8	—
BCM50 and BCM50b	1.3.6.1.4.1.562.37.1.4	—
BCM50a and BCM50ba	1.3.6.1.4.1.562.37.1.4	1.3.6.1.4.1.562.37.1.5
BCM50e and BCM50be	1.3.6.1.4.1.562.37.1.4	1.3.6.1.4.1.562.37.1.6

The Small Site Events MIB defines events (SNMP traps) that can be used by any Small Site product or component. BCM traps can be captured and viewed using a standard SNMP fault monitoring framework or trap watcher.

SNMP traps are generated by the BCM if you have enabled SNMP for specific BCM50 alarms. You configure SNMP settings using the Alarm Settings task in the Element Manager.

Copyright © 2009 Nortel Networks

The following table lists the SNMP trap fields for Small Site Event MIBs.

Table 44 SNMP trap fields for the Small Site Event MIB

Trap field	Description
Enterprise	OID identifies the product (iso.org.dod.internet.private.enterprises.nortel.smallsite.common.events[1.3.6.1.4.1.562.37.3.1])
Agent address	IP address of one of the BCM50 interfaces
Generic trap type	6 for Enterprise-specific traps
Specific trap type	1 = eventInfo trap type 2 = eventWarning trap type 3 = eventError trap type
Time stamp	the system up time

The following table lists the SNMP variable bindings.

Table 45 Variable bindings

Trap field	Description
Binding #1	Contains the corresponding alarm ID. OID: 1.3.6.1.4.1.562.37.3.1.1.0
Binding #2	Contains the name of the software component that generated the alarm (trap). This is in the 3-part DN format defined in the Nortel Common Alarm Framework. The 3-part DN is in the format: systemId=BCM, entityId=System Name, subEntityId=Component Name OID: 1.3.6.1.4.1.562.37.3.1.2.0
Binding #3	Contains the alarm (trap) Date and Time OID: 1.3.6.1.4.1.562.37.3.1.3.0
Binding #4	Contains the alarm (trap) problem description OID: 1.3.6.1.4.1.562.37.3.1.4.0

Application launcher

The Application Launcher is a web based application that allows you to view and modify the applications on your BCM platform. You can open the Application Launcher by using your web browser or clicking on the Application Launcher link on your desktop.

Copyright © 2009 Nortel Networks

The Application Launcher provides the following functionality:

- automatically downloads and installs software:
  The Application Launcher downloads and installs your applications from a specified location, which can be BCM webpage, www.nortel.com, partner website, specified HTTP or FTP.
- automatically maintains software versions:
  The Application Launcher reviews the configuration file and determines the version being used. It is not the latest version of the software, Application Launcher downloads the most up-to-date version to your computer.
- allows branding and customization.
  Use the Application Launcher to customize appearance of BCM webpage. The BCM webpage can include partner logo, partner URL and other branding attributes along with the Application Launcher.
- verifies your credentials.
  The Application Launcher verifies your credentials and sends you a list of applications available for your platform.

Copyright © 2009 Nortel Networks

Copyright © 2009 Nortel Networks

System-wide security policies configuration

The information in this chapter applies to both the BCM50 and the BCM450 platforms running BCM 5.0.

Configure system-wide security policies to install web server certificates and to download the SSK key-pair.

System-wide security policies configuration navigation

- BCM 5.0 system entry policy definition (page 137)
- BCM 5.0 local authentication policy definition (page 138)
- BCM 5.0 authentication service policy definition (page 141)
- BCM 5.0 SSL and SSH policy usage (page 145)

BCM 5.0 system entry policy definition

Use the Entry Policy tab to perform the following procedure:

Configuring system access control policy

Configure system access control policies to allow the administrator to set system access rules.

Procedure steps

Step	Action
1	Under the **Task Navigation Panel**, choose **Configuration** > **Administrator Access** > **Security Policies** > **Entry Policy**.
2	To prevent the warning message from opening after log on, select the **Disable post-login** check box. **OR** To allow the warning message to appear, leave the **Disable post-login** check box cleared.

Copyright © 2009 Nortel Networks

3 Enter a new warning in the **Post-login** message box or leave the default warning.

4 Select the **Disable Telset login** check box to prevent users from administrating the system through any Telset interface.

5 In the **Challenge Key** field, enter a new Challenge key or use the default Nortel Challenge key provided.

If you enter a new Challenge key, keep a record of it.

6 Select the **Show/Hide** check box to display asterisks rather than the characters in the Challenge key.

--End--

BCM 5.0 local authentication policy definition

Define authentication policies to control password length and complexity, to configure the number of times a user can attempt to log in, and how often users must renew their passwords.

This section contains information on the following topics:

- Configuring credential complexity (page 138)
- Configuring lockout on failed login policy (page 139)
- Configuring the idle session timeout (page 139)
- Configuring password expiry policy (page 140)
- Configuring password history policy (page 140)

Configuring credential complexity

Configure credential complexity to allow the administrator to define the rules for password length and password complexity.

Procedure steps

Step	Action
1	Under the **Task Navigation Panel**, choose **Configuration** > **Administrator Access** > **Security Policies** > **Local Authentication Policy**.
2	In the **Credential Complexity** section, in the **Credential Type** column, select the credential type.
3	In the **Minimum User ID Length** column, enter the required number of characters or digits for a user ID.
4	Under the **Minimum Password Length** column, enter the required number of characters or digits for the user password.

Copyright © 2009 Nortel Networks

5	Under the **Password Complexity Level** column, enter a number from 1 to 5 that represents the password complexity level requirement (or enter 0 for no complexity check). For an alphanumeric password, the level is from 0 to 4. For a numeric password, the level is from 0 to 5.

--End--

Configuring lockout on failed login policy

Configuring Lockout on Failed Login allows the administrator to set lockout rules. Administrators can unlock accounts that have been locked out

Procedure steps

Step	Action
1	Under the **Task Navigation Panel**, choose **Configuration** > **Administrator Access** > **Security Policies** > **Local Authentication Policy**.
2	In the **Lockout on Failed Login** section, select the **Enable lockout** check box to enable lockout capabilities.
3	In the **Lockout counter** field, enter a number that represents the number of times a user can try to log on with an incorrect password.
4	In the **Lockout duration** field, enter the number of minutes the user becomes locked out after the Lockout counter threshold is reached.
5	In the **Lockout counter reset** field, enter the number of minutes to wait to reset the Lockout counter.

--End--

Configuring the idle session timeout

You can use the idle session timeout feature to automatically log out users who have been inactive for a specified period of time. Follow this procedure to specify the period of time before inactive sessions are timed out.

Copyright © 2009 Nortel Networks

Procedure steps

Step	Action
1	Select **Configuration > Administrator Access > Security Policies > Session Management Policy**.
2	In the **Session timeout** box, enter the number of minutes to wait after a period of inactivity before the session times out.

--End--

Configuring password expiry policy

Use this procedure to create a password expiry policy.

Procedure steps

Step	Action
1	Under the T**ask Navigation Panel,** choose **Configuration > Administrator Access > Security Policies > Local Authentication Policy**.
2	Select the **Enable** check box to enable the password expiry policy.
3	In the **Days before password expire** field, enter the number of days that you can use a password before it expires.
4	In the **Warning days before password expire** field, enter the number of days prior to password expiry that the user receives a notification.

--End--

Configuring password history policy

You can use the password history feature to prevent users from re-using the same password. Administrators can configure the number of previous passwords to store and check.

Procedure steps

Step	Action
1	Under the **Task Navigation Panel**, choose **Configuration** > **Administrator Access** > **Security Policies** > **Local Authentication Policy**.
2	In the **Password history** section, select the **Enable Password History** check box.

Copyright © 2009 Nortel Networks

3 In the **Password history length** field, enter the number of previous passwords to store and check for an account.

--End--

BCM 5.0 authentication service policy definition

Use the following procedures to define BCM 5.0 authentication service policies

BCM 5.0 authentication service policy definition procedures navigation

- Configuring the authentication method (page 141)
- Configuring the authentication server (page 142)

Configuring the authentication method

By default, users are authenticated on the local Nortel Business Communications Manager 5.0 system. In a network with multiple Nortel Business Communications Manager 5.0 systems, you can choose to authenticate users on a centralized server using Remote Authentication Dial-In User Service (RADIUS).

The BCM RADIUS client complies with the RADIUS protocol described in RFC 2865, and supports the following authentication and authorization functions:

- ACCESS-REQUEST messages
- ACCESS-ACCEPT messages

RADIUS does not support other functions, such as challenge key and accounting messages.

If you use RADIUS to authenticate and authorize users, and the RADIUS servers are not in-service or are out-of-contact, the BCM reverts to using local authentication.

When you select RADIUS as the authentication method, user IDs and passwords are authenticated on the RADIUS server for the following tasks:

- administration of the BCM using Element Manager
- access to the BCM website
- access to the BCM Monitor
- dial-in access to the BCM using modem or ISDN
- Contact Centre administration
- BCM Amp configuration
- CTE DA ProAE

Copyright © 2009 Nortel Networks

- Telset administration
- IP set registration
- voice mail and web-based administration
- Call Detail Recording functionality

Procedure steps

Step	Action
1	Under the **Task Navigation Panel**, choose **Configuration** > **Administrator Access** > **Security Policies** > **Authentication Service Policy**.
2	On the **Account Management** menu, select **Local Authentication** or **RADIUS**.

--End--

Configuring the authentication server

To authenticate users on a centralized RADIUS server, you must configure the server using Element Manager.

Procedure steps

Step	Action
1	Under the **Task Navigation Panel**, choose **Configuration** > **Administrator Access** > **Security Policies** > **Authentication Service Policy**.
2	To select a server as the primary authentication server, click in each column of the table and enter the following attributes:

Column	Value
Server name	Name of the server to use for authentication
Server IP address	IP address of the server to use for authentication
Server Port	Port number of the server to use for authentication
Enabled	Select to enable the use of RADIUS server authentication
In Contact	Read-only. Indicates whether the BCM 5.0 is in contact with the RADIUS server.
Details for RADIUS server	
Server Message Timeout	Length of time to wait for the server to respond to a request for authentication before timing out

Copyright © 2009 Nortel Networks

Column	Value
Server Retries	Number of times to retry connecting with the primary server before using an alternate means of authenticating the user
Server Shared Secret	Key required for the BCM 5.0 to communicate with the authentication server

3 Repeat step 2 to configure the secondary server.

--End--

Vendor specific attributes

The BCM requires Vendor Specific Attributes (VSAs) to be present in RADIUS client requests. The BCM Webpage provides a RADIUS dictionary that defines the Nortel-specific attributes. The attributes in the dictionary are defined for a Funk RADIUS server; however, the RADIUS client in BCM complies with RFC 2865 and can be used on other RADIUS servers.

Procedure steps

Step **Action**

1 Configure the ACCESS-REQUEST message. In an ACCESS-REQUEST message, the BCM will look for the attributes listed in the table below.

Attribute Name	Description
NAS Identifier	The hostname of the BCM (string)
IP	The IP address of the BCM
Calling Station ID	The IP address/DN of the client attempting the request

2 Configure the ACCESS-ACCEPT message. In an ACCESS-ACCEPT message, the BCM will look for the attributes listed in the table below.

Attribute Name	Value	Description
RADIUS attribute type	26	Vendor specific attribute
Vendor type	562	Northern Telecom (Nortel)

Copyright © 2009 Nortel Networks

Attribute Name	Value	Description
Vendor attribute type	166	BCM privilege level of the user being authenticated. Enter this level as a hex integer.
Privilege level	0-36 (see Table in step 3)	Privilege level of user, entered in big endian (network byte order).

3 Configure the privilege levels. BCM requires the RADIUS server to provide one or more privilege levels when the user authentication is accepted. The table below lists the privilege levels. These must be provided as a 32-bit integer in big endian format (network byte order).

Privilege Name	Value	Description
VoiceMailAdmin	0	Voice Mail Administrator
Contact Center	1	MMCC - Administrator
SBAInstaller	2	Set Based Administrator Level 4
SBASystemCoord	3	Set Based Administrator Level 3
SBASystemCoordBasic	4	Set Based Administrator Level 2
SBABasic	5	Set Based Administrator Level 1
Security	6	Security Administrator
CTEApp	7	LAN CTE DA Pro AE User
SBA - IP Set Registration	8	IP set registration privilege - from IP telephone sets
Application - BCMMonitor	9	BCM Monitor user
CDRApp	10	CDR Application Privilege
Modem Login	11	Dial-in PPP user
GuestLogin	12	Access to BCM Web pages - user level
AdminDownload	13	Administrative application download
ExclusiveAccess	14	Access to the BCM when exclusive access flag enabled.
Admin	16	Access to the BCM configuration.
DataAdmin	17	Access to the data portion of CIM/ XML interface.

Copyright © 2009 Nortel Networks

Privilege Name	Value	Description
RemoteAccess	18	Access to remote access fields of BCM configuration.
Guest	19	Access to all of the BCM configuration for read-only access.
VoiceAdmin	20	The ability to administer the telephony portion of the BCM configuration.
BackupOperator	21	The ability to backup a BCM.
RemoteMonitoring	22	The ability to remotely connect to and manage the BCM configuration (i.e. SNMP configuration).
SoftwareUpgrade	23	The ability to upgrade the BCM
AlarmViewer	24	The ability to view the alarm screen.
Operational Logs	26	The ability to download operational logs.
Diagnostic Logs	27	Full access to download any logs.
ISDN - Dial-in	30	The ability to use ISDN for dial-in.
WAN - Dial-in	32	The ability to use WAN for dial-in PPP access.
System - Serial Port	36	The ability to configure the BCM through the serial port.

--End--

BCM 5.0 SSL and SSH policy usage

Use SSL and SSH policies to upload custom security certificates and to ensure secure connections for backup and restore operations and software updates.

BCM 5.0 SSL and SSH policy usage procedures navigation

- Uploading a Web Server Certificate (page 146)
- Transferring an SSH Key-Pair (page 146)

Copyright © 2009 Nortel Networks

Uploading a Web Server Certificate

You can upload a private security certificate to replace the generic web certificate provided with Nortel Business Communications Manager 5.0. With a custom site-specific certificate, you can have site validation that eliminates security warnings.

Procedure steps

Step	Action
1	Under the **Task Navigation Panel**, choose **Configuration** > **Administrator Access** > **Security Policies** > **SSL and SSH Policy**.
2	In the **SSL** section, click **Install Web Server Certificate**.
3	On the **Transfer Certificate** browse pane, locate and select the security certificate file.
4	Click **Transfer Certificate**.
5	On the **Transfer Private Key** browse pane, locate and select the private key file.
6	Click **Transfer Private Key**.
7	On the **Install Web Server** certificate window, click **OK** to install the certificate.

--End--

Transferring an SSH Key-Pair

Transfer an SSH Key-Pair to allow the administrator to download a public security certificate or an SSH key-pair. Install the new certificate on each SFTP server the BCM 5.0 communicates with to ensure a secure connection for operations, such as backup and restore, and software updates.

Procedure steps

Step	Action
1	Under the **Task Navigation Panel**, choose **Configuration** > **Administrator Access** > **Security Policies** > **SSL and SSH Policy**.
2	In the **SSH** section, click **Generate New SSH Key-pair**. The new key is placed on the computer running BCM 5.0.
3	Click **Save**.
4	For the SSH Key-pair, click **Transfer Public Key**.
5	In the **Save** dialog box, locate and select the public key file.

Copyright © 2009 Nortel Networks

6 Click **Save** to transfer the files.

--End--

Copyright © 2009 Nortel Networks

Copyright © 2009 Nortel Networks

Accounts, groups, and privileges configuration

The information in this chapter applies to both the BCM50 and the BCM450 platforms running BCM 5.0.

This chapter provides procedures to establish accounts and access privileges for users of the Nortel Business Communications Manager 5.0 system

Navigation

- BCM 5.0 user account management (page 149)
- BCM 5.0 feature additions for dial-up users (page 152)
- BCM 5.0 user password management (page 153)
- BCM 5.0 user group management (page 155)
- BCM 5.0 account enabling and disabling (page 158)

BCM 5.0 user account management

Use the following procedures to create, modify, delete, and configure user accounts.

BCM 5.0 user account management procedures navigation

- Adding a new user account (page 149)
- Modifying a user account (page 150)
- Adding Telset access for a user (page 151)
- Deleting a user account (page 151)

Adding a new user account

Administrators can create user accounts when the BCM is configured to authenticate users locally. The BCM 5.0 supports up to 1999 user accounts.

Copyright © 2009 Nortel Networks

After you create a new user account, you can assign groups to that account. Groups are sets of privileges based on user tasks or roles. For information about creating groups and assigning groups to accounts, see BCM 5.0 user group management procedures navigation (page 155) and Adding a user account to a group (page 157).

Procedure steps

Step	Action
1	Under the **Task Navigation Panel**, choose **Configuration > Administrator Access** > **Accounts and Privileges** > **View by Account** tab.
2	Click **Add**.
3	In the **Add Account** dialog box, enter a description of the account in the **Description** field.
4	Enter the user identifier in the **User ID** field.
5	In the **User password** field, enter the user password.
6	In the **Confirm password** dialog box, enter the user password again.
7	Enter the Telset user ID.
8	In the **Telset password** field, enter the Telset password for the user.
9	In the **Confirm password** dialog box, enter the user password again.
10	If the user connects through a modem, enter the number the system dials to contact the client modem in the **Modem Callback Number** field and a passcode in the **Modem Callback Passcode** field (include the correct routing codes).
11	If the user connects through ISDN, enter the number the system dials to contact the client in the **ISDN Callback Number** field and a passcode in the **ISDN Callback Passcode** field.
12	Select the **Change Password on Login** check box to force a password change when the user logs on to Element Manager.
13	Select the **Change Password on Login Telset** check box to force a password change when the user logs on to Telset.
14	Click **OK** to save the user account.
15	After the account is created, the user can change their own password through the **Current Account** pane.

--End--

Modifying a user account

As an administrator, you can modify user accounts.

Copyright © 2009 Nortel Networks

Procedure steps

Step	Action
1	Under the **Task Navigation Panel**, choose **Configuration > Administrator Access** > **Accounts and Privileges** > **View by Account** tab.
2	Select an existing user in the **Accounts** table and click **Modify**.
3	In the **Modify Account** dialog box, make the changes you require.
4	Click **OK** to save the user account.

--End--

Adding Telset access for a user

As an administrator, you can provide an existing user with access to the system through a set-based connection.

Procedure steps

Step	Action
1	Under the **Task Navigation Panel**, choose **Configuration > Administrator Access** > **Accounts and Privileges** > **View by Account** tab.
2	Select an existing user on the **Accounts** table and click **Modify**.
3	In the **Telset User ID** field, enter the user identifier.
4	In the **Telset Password** field, enter the user Telset password.
5	Reenter the Telset password in the **Confirm Password** dialog box.
6	Click **OK**.

--End--

Deleting a user account

As an administrator, you can delete user accounts.

Procedure steps

Step	Action
1	Under the **Task Navigation Panel**, choose **Configuration > Administrator Access** > **Accounts and Privileges** > **View by Account** tab.
2	Select a user on the **Accounts** table.

Copyright © 2009 Nortel Networks

3 Click **Delete**.

4 In the **Confirmation** box, click **Yes** to remove the user account from the system.

--End--

BCM 5.0 feature additions for dial-up users

Use the following procedures to add features for dial-up users.

BCM 5.0 feature additions for dial-up users procedures navigation

- Adding callback for a dial-up user (page 152)
- Adding NAT rules for a dial-up user (page 153)

Adding callback for a dial-up user

As an administrator, you can provide callback access to a user who accesses the system through a dial-up connection.

Procedure steps

Step	Action
1	Under the **Task Navigation Panel**, choose **Configuration > Administrator Access** > **Accounts and Privileges** > **View by Account > Remote Access** tab.
2	Select an existing user on the **Accounts** table.
3	Click the **Modify** button in the Accounts section.
4	If the user connects through a modem, enter the number the system dials to contact the client modem in the **Modem Callback Number** field and enter a passcode in the **Modem Callback Passcode** field (include the correct routing codes).
5	If the user is connecting through ISDN, enter the number the system dials to contact the client in the **ISDN Callback Number** field and enter a passcode in the **ISDN Callback Passcode** field.
6	Click **OK**.

--End--

Adding NAT rules for a dial-up user

As an administrator, you can add Network Address Translation (NAT) rules for a user who accesses the system through a dial-up connection. When you add a NAT rule, your network can use one set of IP addresses for internal traffic and a second set of IP addresses for external traffic. This translation provides

Copyright © 2009 Nortel Networks

security for your LAN by hiding the IP addresses of devices on your network from external computers. This procedure allows you to configure NAT on dial-up interfaces.

Procedure steps

Step	Action
1	Under the **Task Navigation Panel**, choose **Configuration > Administrator Access** > **Accounts and Privileges** > **View by Account.**
2	Select an existing user on the **Accounts** table.
3	Click the **Remote Access** tab.
4	Click **Modify** in the NAT Rules section.
5	In the **Rule 1: Dial-in Side** field, enter the IP address to be translated from. You cannot use a multicast address when you create NAT rules.
6	In the **LAN Side** field to the right, enter the IP address on the local LAN to be translated to. You cannot use a multicast address when you create NAT rules.
7	Repeat step 5 and step 6 to create additional rules.
8	Click **OK**.

--End--

BCM 5.0 user password management

Use these procedures to manage user passwords.

BCM 5.0 user password management procedures

- Changing a user password (page 153)
- Changing the current user password (page 154)

Changing a user password

As an administrator, you can change a user's forgotten password, or reset the user password for each user to enforce regular password-change policy. You can also force a password change when the user logs in.

Procedure steps

Step	Action
1	Under the **Task Navigation Panel**, choose **Configuration > Administrator Access** > **Accounts and Privileges** > **View by Accounts** tab.

Copyright © 2009 Nortel Networks

2 Select the user record from the table and click **Modify**.

3 In the **Modify Account** window, delete the asterisks in the **Password** or **Telset password** field.

4 Enter a new password and click **OK**.

5 Reenter the password in the **Confirm Password** dialog box.

6 Provide the user with this password and request that they change it as soon as possible through the **Current User** pane or click on **Change Password on Login** to make a password change mandatory.

--End--

Changing the current user password

As a user or an administrator, you must change your password periodically.

Procedure steps

Step	Action
1	Under the **Task Navigation Panel**, choose **Configuration > Administrator Access** > **Accounts and Privileges** > **Current Account** pane.
2	Select the password field that needs to change.
3	Enter a new password that conforms with the system password policies, defined by the administrator during system setup. A **Password Confirmation** dialog box appears.
4	In the **Password Confirmation** dialog box, enter the new password again.
5	Click **OK**. The password takes effect the next time you log on.

--End--

BCM 5.0 user group management

Use the following procedures to manage and create user groups.

BCM 5.0 user group management procedures navigation

- Creating a group (page 156)
- Deleting a group (page 156)
- Modifying group privileges (page 156)
- Adding a user account to a group (page 157)
- Deleting a user account from a group (page 157)

Copyright © 2009 Nortel Networks

Creating a group

As an administrator, you can create new groups to satisfy organizational requirements.

Procedure steps

Step	Action
1	Under the **Task Navigation Panel**, choose **Configuration > Administrator Access** > **Accounts and Privileges** > **View by Groups** tab.
2	Click **Add**.
3	In the **Add Group** dialog box, enter a name for the new group.
4	Click **OK**.
5	Select the new group from the **Groups** list.
6	In the **Group Privileges** section, click **Add**.
7	In the **Add Privilege to Group** dialog box, select one or more group privileges to assign to the group and click **OK**.

--End--

Deleting a group

As an administrator, you can delete groups as organizational requirements change.

Procedure steps

Step	Action
1	Under the **Task Navigation Panel**, choose **Configuration > Administrator Access** > **Accounts and Privileges** > **View by Groups** tab.
2	Select a group and click **Delete**.
3	Click **Yes** on the **Confirmation** box to remove the groups from the list.

--End--

Modifying group privileges

You can only modify user-created groups; you cannot modify default group privileges.

Copyright © 2009 Nortel Networks

Procedure steps

Step	Action
1	Under the **Task Navigation Panel**, choose **Configuration > Administrator Access** > **Accounts and Privileges** > **View by Groups** tab.
2	Select a group.
3	Click the **General** tab.
4	Click the **Group Privileges** tab.
5	Select one or more group privileges
6	Click **Delete** to remove the privileges from the existing group. **OR** Click **Add** to add the privileges to the existing group.
7	In the **Confirmation** dialog box, click **Yes**.

--End--

Adding a user account to a group

As an administrator, you can add user accounts to one or more groups to satisfy access requirements.

Procedure steps

Step	Action
1	Under the **Task Navigation Panel**, choose **Configuration > Administrator Access** > **Accounts and Privileges** > **View by Groups** tab.
2	Select a group and click the **Members** tab.
3	Click **Add**.
4	In the **Add Account to Group** dialog box, select one or more groups.
5	Click **OK**.

--End--

Deleting a user account from a group

As an administrator, you can remove user accounts from a group to limit user access.

Copyright © 2009 Nortel Networks

Procedure steps

Step	Action
1	Under the **Task Navigation Panel**, choose **Configuration > Administrator Access** > **Accounts and Privileges** > **View by Groups** tab.
2	Select a group and click the **Members** tab.
3	Select one or more groups in **Accounts in Group** in the **Members** table.
4	Click **Delete**.
5	In the **Confirmation** box, Click **OK** to remove the groups from the list.

--End--

BCM 5.0 account enabling and disabling

This section contains information on enabling and disabling user accounts.

BCM 5.0 account enabling and disabling procedures navigation

- Deleting a user account from a group (page 157)
- BCM 5.0 account enabling and disabling procedures navigation (page 158)
- Enabling and disabling an account (page 159)

Reenabling a locked-out user

As the administrator you can re-enable a locked-out user when the user has exceeded the login retry threshold.

The system shows an enabled check box under the **Locked Out** column on the **Users** table.

Procedure steps

Step	Action
1	Under the **Task Navigation Panel**, choose **Configuration > Administrator Access** > **Accounts and Privileges** > **View by Accounts** tab.
2	Select the user record with the **Locked Out** status check box selected.
3	Clear the **Locked Out** check box.

--End--

Copyright © 2009 Nortel Networks

Enabling and disabling an account

As the administrator, you can enable or disable accounts on an immediate or timed basis.

Procedure steps

Step	Action
1	Under the **Task Navigation Panel**, choose **Configuration > Administrator Access** > **Accounts and Privileges** > **View by Accounts** tab.
2	Select the user you want to disable or enable in the **Accounts** table.
3	Under the **Disabled** column, either select (disable) or clear (enable) the check box for the user. The change applies the next time the user logs on.

--End--

Copyright © 2009 Nortel Networks

Copyright © 2009 Nortel Networks

Copyright © 2009 Nortel Networks

Data backup and restore

The information in this chapter applies to both the BCM50 and the BCM450 platforms running BCM 5.0.

This chapter provides instructions for backup and restore operations for Nortel Business Communications Manager 5.0.

Navigation

- On-demand backups (page 160)
- Scheduled backups (page 165)
- Data restoration (page 174)

On-demand backups

This section contains information on how to perform on-demand backups to the BCM 5.0.

On-demand backup procedures navigation

- Performing an immediate backup to your BCM 5.0 (page 160)
- Performing an immediate backup to your personal computer (page 161)
- Performing an immediate backup to a network folder (page 162)
- Performing an immediate backup to a USB storage device (page 163)
- Performing an immediate backup to an FTP server (page 163)
- Performing an immediate backup to an SFTP server (page 164)

Performing an immediate backup to your BCM 5.0

You can perform immediate backups to BCM 5.0.

Procedure steps

Step	Action
1	Under the **Task Navigation Panel**, click on the **Administration** tab.
2	Open the **Backup and Restore** folder, and then click **Backup**.

Copyright © 2009 Nortel Networks

	The **Backup** pane opens and displays the **Immediate Backup** tab.
3	In the **Backup To** field, select **BCM**.
4	Click **Backup**.
5	The **Backup** window appears.
6	In the **Optional Components** table, select or clear the check box for each component to include or exclude these components from the backup operation.
7	Click **OK**.
8	A warning window opens. Read the warning carefully, then click **Yes** to proceed.
9	A progress window appears. When the backup completes, the **Backup Complete** message appears.
10	Click **OK**.

--End--

Performing an immediate backup to your personal computer

You can perform immediate backups to your personal computer.

Procedure steps

Step	Action
1	Under the **Task Navigation Panel**, click on the **Administration** tab.
2	Open the **Backup and Restore** folder, and then click **Backup**.
3	The **Backup** pane appears and displays the **Immediate Backup** tab.
4	In the **Backup To** field, select **My Computer**.
5	Click **Backup**.
6	The **Backup** window appears.
7	In the **Optional Components** table, select or clear the check box for each component to include or exclude these components from the backup operation.
8	Click the **OK** button.
9	A warning message appears. Read the warning then, click **Yes** to proceed.
10	A progress window appears. When the backup preparation is complete, the **Save** window appears.
11	Specify the directory and enter a file name in the **File Name** field.

Copyright © 2009 Nortel Networks

12	Enter a file name with a .tar extension (e.g. backup2.tar) so that you can examine the file with a utility such as WinZip. If you do not select the folder backup, the new backup file is stored in the root of this folder.
13	Click **Save**. When the backup is complete the **Backup Complete** message appears.
14	Click **OK**.

--End--

Performing an immediate backup to a network folder

You can perform immediate backups to network folder.

Procedure steps

Step	Action
1	Under the **Task Navigation Panel**, click on the **Administration** tab.
2	Open the **Backup and Restore** folder, and then click **Backup**.
3	The **Backup** pane appears and displays the **Immediate Backup** tab.
4	In the **Backup To** field, select **Network Folder**.
5	Configure the **Network Folder** attributes.
6	Click the **Backup** button.
7	The **Backup** window appears.
8	In the **Optional Components** table, select or clear the check box for each component to include or exclude these components from the backup operation.
9	Click **OK**.
10	A warning window opens. Read the warning carefully, then click **Yes** to proceed.
11	A progress window appears. When the backup preparation is complete, the **Backup Complete** message displays.
12	Click **OK**.

--End--

Copyright © 2009 Nortel Networks

Performing an immediate backup to a USB storage device

You can perform immediate backups to a USB storage device.

Procedure steps

Step	Action
1	Under the **Task Navigation Panel**, click on the **Administration** tab.
2	Open the **Backup and Restore** folder, and then click **Backup**.
3	The **Backup** pane appears and displays the **Immediate Backup** tab.
4	In the **Backup To** field, select **USB Storage Device**.
5	Click **Backup**.
6	The **Backup** window appears.
7	In the **Optional Components** table, select or clear the check box for each component to include or exclude these components from the backup operation.
8	Click the **OK** button.
9	A warning message appears. Read the warning then, click **Yes** to proceed.
10	A progress window appears. When the backup preparation is complete, the **Backup Complete** message appears.
11	Click **OK**.

--End--

Performing an immediate backup to an FTP server

You can perform immediate backups to an FTP server.

Procedure steps

Step	Action
1	Under the **Task Navigation Panel**, click on the **Administration** tab.
2	Open the **Backup and Restore** folder, and then click **Backup**.
3	The **Backup** pane appears and displays the **Immediate Backup** tab.
4	In the **Backup To** field, select **FTP Server**.
5	Configure the **FTP Server** attributes.
6	Click **Backup**. The **Backup** window appears.

Copyright © 2009 Nortel Networks

7	In the **Optional Components** table, select or clear the check box for each component to include or exclude these components from the backup operation.
8	Click **OK**.
9	A warning window opens. Read the warning carefully, then click **Yes** to proceed.
10	A progress window appears. When the backup is complete, the **Backup Complete** message displays.
11	Click **OK**.

--End--

Performing an immediate backup to an SFTP server

You can perform immediate backups to an SFTP server.

Procedure steps

Step	Action
1	Under the **Task Navigation Panel**, click on the **Administration** tab.
2	Open the **Backup and Restore** folder, and then click **Backup**.
3	The **Backup** pane opens and displays the **Immediate Backup** tab.
4	In the **Backup To** field, select **SFTP Server**.
5	Configure the **SFTP Server** attributes.
6	Click **Backup**. The **Backup** window appears.
7	In the **Optional Components** table, select or clear the check box for each component to include or exclude these components from the backup operation.
8	Click **OK**.
9	A warning window opens. Read the warning carefully, then click Yes to proceed.
10	A progress window appears. When the backup preparation is complete, the **Backup Complete** message displays.
11	Click **OK**.

--End--

Copyright © 2009 Nortel Networks

Scheduled backups

You can create scheduled backups in order to perform backups at a date and time that you choose. For example, you can choose a date and time during which your business is closed. This will avoid disrupting the normal work-day routine and may allow your backup file to transfer more quickly.

Scheduled backup procedures navigation

- Accessing the schedule of regular backups (page 165)
- Modifying scheduled backups (page 165)
- Deleting scheduled backups (page 166)
- Creating a scheduled backup to BCM (page 167)
- Creating a scheduled backup to a network folder (page 168)
- Creating a scheduled backup to a USB storage device (page 170)
- Creating a scheduled backup to an FTP server (page 171)
- Creating a scheduled backup to SFTP server (page 172)

Accessing the schedule of regular backups

You can view existing scheduled backups.

Procedure steps

Step	Action
1	Under the **Task Navigation Panel**, click on the **Administration** tab.
2	Open the **Backup and Restore** folder
3	Click **Backup**.
4	The **Backup** pane appears and displays the **Immediate Backup** tab.
5	Click the **Scheduled Backups** tab.
6	The **Scheduled Backups** pane appears. Existing scheduled backups appear in the **Scheduled Backups** table.

--End--

Modifying scheduled backups

You can modify the following existing scheduled backup components:

- the memo for the scheduled backup
- optional components to include in the backup
- schedule details for the backup

Copyright © 2009 Nortel Networks

Procedure steps

Step	Action
1	Under the **Task Navigation Panel**, click on the **Administration** tab.
2	Open the **Backup and Restore** folder.
3	Click **Backup**.
4	The Backup panel opens and displays the Immediate Backup tab.
5	Click the Scheduled Backups tab.
6	The Scheduled Backups panel opens.
7	Select a scheduled backup in the Scheduled Backups table.
8	Click Modify.
9	The **Modify Scheduled Backup** window appears.
10	Modify the attributes of the scheduled backup as required.
11	Click **OK**.
12	The modified backup appears in the Scheduled Backups table.

--End--

Deleting scheduled backups

You can delete existing scheduled backups.

Procedure steps

Step	Action
1	Under the **Task Navigation Panel**, click on the **Administration** tab.
2	Open the **Backup and Restore** folder.
3	Click **Backup**.
4	The **Backup** pane appears and displays the **Immediate Backup** tab.
5	Click the **Scheduled Backups** tab.
6	The **Scheduled Backups** pane appears.
7	Select a scheduled backup in the **Scheduled Backups** table.

Copyright © 2009 Nortel Networks

8	Click **Delete**.
	A confirmation window appears.
9	Click **Yes**.
	The scheduled backup is removed from the **Scheduled Backups** table.

--End--

Creating a scheduled backup to BCM

You can create scheduled backups to BCM.

Procedure steps

Step	Action
1	Under the **Task Navigation Panel**, click on the **Administration** tab.
2	Open the **Backup and Restore** folder, and then click **Backup**.
	The **Backup** pane appears and displays the **Immediate Backup** tab.
3	Click the **Scheduled Backups** tab.
4	The **Scheduled Backups** pane appears.
5	Click **Add**.
6	The **Add Scheduled Backup** window appears.
7	In the **Backup To** field, select **BCM**.
8	Click **OK**.
9	The **Add Scheduled Backup** window opens. Read the warning carefully before proceeding.
10	In the **Optional Components** table, select or clear the check box to include or exclude these components from the backup operation.
11	Click OK.
12	Configure the schedule attributes.
13	Click **OK**.
	The scheduled backup is displayed in the **Scheduled Backups** table.

--End--

Copyright © 2009 Nortel Networks

Variable definitions

Attribute	Action
Memo	Enter a note for the scheduled backup, as applicable.
Recurrence	Select how often you want the scheduled backup to occur. Options include: Once, Daily, Weekly, and Monthly. Depending on the option you choose, the window displays selections for the month and day of the month. If you select Weekly, days of week are display. Select the check box for Daily to select the day.
Month	Select the month in which you want the scheduled backup to occur. Displays only when you select Once as the Recurrence.
Day of Month	Select the day of the month that you want the scheduled backup to occur. Displays only when you select Once or Monthly as the Recurrence.
Time	Select the time that you want the scheduled backup to occur.

Creating a scheduled backup to a network folder

You can create scheduled backups to a network folder.

Procedure steps

Step	Action
1	Under the **Task Navigation Panel**, click on the **Administration** tab.
2	Open the **Backup and Restore** folder.
3	Click **Backup**.
	The **Backup** pane appears and displays the **Immediate Backup** tab.
4	Click the **Scheduled Backups** tab.
	The **Scheduled Backups** pane appears.
5	Click the **Add** button.
	The **Add Scheduled Backup** window appears.
6	In the **Backup To** field, select **Network** folder.
7	Configure the **Network** folder attributes.

Copyright © 2009 Nortel Networks

Attribute	Action
Network Folder	Enter the hostname or IP address of the network folder and resource name. For example, \\<server>\<resource>.
User Name	Enter the user name associated with the network folder.
Password	Enter the password of the user.
Directory	Enter the path to the subdirectory (optional).

8 Click **OK**.

The **Add Scheduled Backup** window appears.

9 In the **Optional Components** table, select or clear the check box to include or exclude these components from the backup operation.

10 Configure the schedule attributes.

Attribute	Action
Memo	Enter a note for the scheduled backup, as applicable.
Recurrence	Select how often you want the scheduled backup to occur. Options are: Once, Daily, Weekly, and Monthly. Depending on the option you choose, the window displays for the month and day of the month. If you select Weekly, the days of the week are displayed. Select the check box for Daily to select the day.
Month	Select the month that you want the scheduled backup to occur. Displays only when you select Once as the Recurrence.
Day of Month	Select the day of the month that you want the scheduled backup is to occur. Displays only when you select Once or Monthly as the Recurrence.
Time	Select the time that you want the scheduled backup is to occur.
Recurrence	Select how often you want the scheduled backup to occur. Options are: Once, Daily, Weekly, and Monthly. Depending on the option you choose, the window displays selections for the month and day of month. If you select Weekly, the days of the week are displayed. Select the check box for Daily to select the day.

Copyright © 2009 Nortel Networks

11	Click **OK**.
	The scheduled backup is displayed in the Scheduled Backups table.

--End--

Creating a scheduled backup to a USB storage device

You can create scheduled backups to a USB storage device.

Procedure steps

Step	Action
1	Under the **Task Navigation Panel**, click on the **Administration** tab.
2	Open the **Backup and Restore** folder.
3	Click **Backup**.
	The **Backup** pane appears and displays the Immediate Backup tab.
4	Click the **Scheduled Backups** tab.
	The **Scheduled Backups** pane appears.
5	Click **Add.**
	The **Add Scheduled Backup** window appears.
6	In the **Backup To** field, select **USB Storage Device.**
7	Click **OK.**
	The **Add Scheduled Backup** window opens.
8	In the **Optional Components** table, select or clear the check box to include or exclude these components from the backup operation.
9	Configure the schedule attributes.

Attribute	Action
Memo	Enter a note for the scheduled backup, as applicable.
Recurrence	Select how often you want the scheduled backup to occur. Options are: Once, Daily, Weekly, and Monthly. Depending on the option you choose, the window displays selections for the month and day of month. If you select Weekly, the days of the week are displayed. Select the check box for Daily to select the day.
Month	Select the month that you want the scheduled backup to occur. Displays only when you select Once as the Recurrence.

Copyright © 2009 Nortel Networks

Attribute	Action
Day of Month	Select the day of the month that you want the scheduled backup is to occur. Displays only when you select Once or Monthly as the Recurrence.
Time	Select the time that you want the scheduled backup to occur.

10 Click **OK**.

The scheduled backup is displayed in the **Scheduled Backups** table.

--End--

Creating a scheduled backup to an FTP server

You can create scheduled backups to an FTP server.

Procedure steps

Step	Action
1	Under the **Task Navigation Panel**, click on the **Administration** tab.
2	Open the **Backup and Restore** folder, and then click **Backup**.
3	The **Backup** panel opens and displays the **Immediate Backup** tab.
4	Click the **Scheduled Backups** tab.
5	The **Scheduled Backups** panel opens.
6	Click the **Add** button.
7	The **Add Scheduled Backup** window opens.
8	In the **Backup To** field, select **FTP Server.**
9	Configure the FTP Server attributes.

Attribute	Action
FTP Server	Enter the hostname or IP address of the FTP server.
User Name	Enter the user name associated with the FTP server.
Password	Enter the password associated with the user name on the FTP server.
Directory	Enter the path to the subdirectory (optional).

10 Click **OK**.

Copyright © 2009 Nortel Networks

11 The **Add Scheduled Backup** window appears.

12 In the **Optional Components** table, select or clear the check box to include or exclude these components from the backup operation.

13 Configure the schedule attributes.

Attribute	Action
Memo	Enter a note for the scheduled backup, as applicable.
Recurrence	Select how often you want the scheduled backup to occur. Options are: Once, Daily, Weekly, and Monthly. Depending on the option you choose, the window displays selections for the month and day of the month. If you select Weekly, the days of the week are displayed. Select the check box for Daily to select the day.
Month	Select the month that you want the scheduled backup to occur. Displays only when you select Once as the Recurrence.
Day of Month	Select the day of the month that you want the scheduled backup to occur. Displays only when you select Once or Monthly as the Recurrence.
Time	Select the time that you the scheduled backup is to occur.

14 Click **OK**.

The scheduled backup is displayed in the **Scheduled Backups** table.

--End--

Creating a scheduled backup to SFTP server

You can scheduled backups to SFTP server.

Procedure steps

Step	Action
1	Under the **Task Navigation Panel**, click on the **Administration** tab.
2	Open the **Backup and Restore** folder.
3	Click **Backup**.
4	The Backup pane appears and displays the **Immediate Backup** tab.
5	Click the **Scheduled Backups** tab.

Copyright © 2009 Nortel Networks

6 The Scheduled Backups pane opens.

7 Click **Add**.

8 The **Add Scheduled Backup** window opens.

9 In the **Backup To** field, select SFTP Server.

10 Configure the FTP Server attributes.

Attribute	Action
SFTP Server	Enter the hostname or IP address of the SFTP server.
User Name	Enter the user name associated with the SFTP server.
Password	Enter the password associated with the user name.
Directory	Enter the path to the subdirectory (optional).

11 Click **OK**.

12 The **Add Scheduled Backup** window opens.

13 In the **Optional Components** table, select or clear the check box to include or exclude these components from the backup operation.

14 Configure the schedule attributes.

Attribute	Action
Memo	Enter a note for the scheduled backup, as applicable.
Recurrence	Select how often you want the scheduled backup to occur. Options are: Once, Daily, Weekly, and Monthly. Depending on the option you choose, the window displays selections for the month and day of the month. If you select Weekly, days of the week are displayed. Select the check box for Daily to select the day.
Month	Select the month that you want the scheduled backup to occur. Displays only when you select Once as the Recurrence.
Day of Month	Select the day of the month that you want the scheduled backup to occur. Displays only when you select Once or Monthly as the Recurrence.
Time	Select the time that you want the scheduled backup to occur.

Copyright © 2009 Nortel Networks

15	Click **OK**. The scheduled backup is displayed in the **Scheduled Backups** table.

--End--

Data restoration

You can restore BCM 5.0 configuration and application data using the Element Manager.

Data restoration procedures navigation

- Restoring a backup from BCM (page 174)
- Restoring a backup from a PC (page 175)
- Restoring a backup from a network folder (page 176)
- Restoring a backup from USB storage (page 177)
- Restoring a backup from an FTP server (page 178)
- Restoring a backup from an SFTP server (page 179)
- Restoring the factory default configuration (page 180)

Restoring a backup from BCM

You can restore backups from the BCM.

Procedure steps

Step	Action
1	Under the **Task Navigation Panel**, click on the **Administration** tab.
2	Open the **Backup and Restore** folder.
3	Click **Restore**.
4	The **Restore** pane appears. The **Restore From field** has **BCM** as the default value.
5	Click **Restore**.
6	The **Select Components to Restore** window appears.
7	Select the optional components that you want to include from the backup file.
8	Click **OK**. A warning window opens and displays information about components that will be affected by the restore operation.

Copyright © 2009 Nortel Networks

9 Click **Yes** to proceed.

A progress window opens. When the operation completes, the **Restore Complete** window appears.

10 Click **OK**.

--End--

Restoring a backup from a PC

You can restore a backup from a PC.

Procedure steps

Step	Action
1	Under the **Task Navigation Panel**, click on the **Administration** tab.
2	Open the **Backup and Restore** folder, and then click **Restore**. The **Restore** pane appears.
3	In the **Restore From** field, select **My Computer**. Click **Restore**. The **Open** window appears.
4	Select the backup file to restore.

CAUTION
Risk of service loss
When you proceed to the next step, the selected file overwrites the backup file stored on the Nortel Business Communications Manager 5.0. Ensure that you select the correct backupfile before you proceed.

5	Click **Open**. The **Select Components to Restore** window appears. A window opens and displays information about the backup file, including a warning that the selected backup file will replace the backup file currently stored on the BCM 5.0.
6	Select the optional components that you want to include from the backup file.
7	Click **OK**. A warning window opens and displays information about components that will be affected by the restore operation.

Copyright © 2009 Nortel Networks

8 Click **Yes** to proceed

A progress window appears. When the operation completes, the **Restore Complete** window appears.

9 Click **OK**.

--End--

Restoring a backup from a network folder

You can restore a backup from a network folder.

Procedure steps

Step	Action
1	Under the **Task Navigation Panel**, click on the **Administration** tab.
2	Open the **Backup and Restore** folder.
3	Click **Restore**. The **Restore** pane appears.
4	In the **Restore From** field, select Network Folder.
5	Configure the Restore from Network Folder attributes. A window opens and displays information about the backup file, including a warning that the selected backup file will replace the backup file currently stored on the Nortel Business Communications Manager 5.0.

CAUTION
Risk of service loss
When you proceed to the next step, the selected file overwrites the backup file that is stored on the Nortel Business Communications Manager 5.0. Ensure that you select the correct backup file before you proceed.

6	Click **Open**. The **Select Components to Restore** window appears.
7	Select the optional components that you want to include from the backup file.
8	Click **OK**. A warning window opens and displays information about components that will be affected by the restore operation.

Copyright © 2009 Nortel Networks

9 Click **Yes** to proceed.

A progress window appears. When the operation completes, the **Restore Complete** window appears.

10 Click **OK**.

--End--

Variable definitions

Attribute	Action
Network Folder	Enter the hostname or IP address of the network folder and resource name. For example, \\<server>\<resource>.
User Name	Enter the user name associated with the network folder.
Password	Enter the password of the user.
Directory	Enter the path to the subdirectory, as applicable (optional).
File	Enter the name of the backup file.

Restoring a backup from USB storage

You can restore a backup from a USB storage device.

Procedure steps

Step	Action
1	Under the **Task Navigation Panel**, click on the **Administration** tab.
2	Open the **Backup and Restore** folder. Click **Restore**. The **Restore** pane appears.
3	In the **Restore From** field, select **USB Storage Device**.
4	Select the backup file to restore.

Copyright © 2009 Nortel Networks

5	A window opens and displays information about the backup file, including a warning that the selected backup file will replace the backup file currently stored on the Nortel Business Communications Manager 5.0.

CAUTION
Risk of service loss
When you proceed to the next step, the selected file overwrites the backup file that is stored on the Nortel Business Communications Manager 5.0. Ensure that you select the correct backup file before you proceed.

6	Click **Open**.
7	The **Select Components to Restore** window appears.
8	Select the optional components that you want to include from the backup file.
9	Click **OK**.
10	A warning window opens and displays information about components that will be affected by the restore operation.
11	Click **Yes** to proceed. A progress window opens. When the operation completes, the **Restore Complete** window opens.
12	Click **OK**.

--End--

Restoring a backup from an FTP server

You can restore a backup from an FTP server.

Procedure steps

Step	Action
1	Under the **Task Navigation Panel**, click on the **Administration** tab.
2	Open the **Backup and Restore** folder.
3	Click **Restore**. The **Restore** pane appears.
4	In the **Restore From field**, select **FTP Server**.
5	Configure the Restore from FTP Server attributes.

Copyright © 2009 Nortel Networks

Attribute	Action
FTP server	Enter the hostname or IP address of the FTP server.
User Name	Enter the user name associated with the FTP server.
Password	Enter the password associated with the user name.
Directory	Enter the path to the subdirectory, as applicable (optional).
File	Enter the name of the backup file.

CAUTION

Risk of service loss

When you proceed to the next step, the selected file will overwrite the backup file that is stored on the Nortel Business Communications Manager 5.0. Ensure that the correct backup file is selected before proceeding.

6 Click **Open**.

7 The **Select Components to Restore** window appears.

8 Select the optional components that you want to include in the backup file.

9 Click **OK**.

A warning window opens and displays information about components that will be affected by the restore operation.

10 Click **Yes** to proceed.

A progress window opens. When the operation completes, the Restore Complete window opens.

11 Click **OK**.

--End--

Restoring a backup from an SFTP server

You can restore a backup from an SFTP server.

Procedure steps

Step	Action
1	Under the **Task Navigation Panel**, click on the **Administration** tab.
2	Open the **Backup and Restore** folder.

Copyright © 2009 Nortel Networks

3 Click **Restore**.

4 The **Restore** pane appears.

5 In the **Restore From** field, select **SFTP Server**.

6 Configure the Restore from SFTP Server attributes.

Attribute	Action
SFTP server	Enter the hostname or IP address of the SFTP server.
User Name	Enter the user name associated with the SFTP server.
Password	Enter the password associated with the user name.
Directory	Enter the path to the subdirectory, as applicable (optional).
File	Enter the name of the backup file.

CAUTION
Risk of service loss
When you proceed to the next step, the selected file overwrites the backup file that is stored on the Nortel Business Communications Manager 5.0. Ensure that you select the correct backup file before you proceed.

7 Click **Open**.

The **Select Components to Restore** window appears.

8 Select the optional components that you want to include in the backup file.

9 Click **OK**.

A warning window opens and displays information about components that will be affected by the restore operation.

10 Click **Yes** to proceed.

A progress window opens. When the operation completes, the **Restore Complete** window appears.

11 Click **OK**.

--End--

Restoring the factory default configuration

You can restore the factory default configuration.

Copyright © 2009 Nortel Networks

Procedure steps

Step	Action
1	Under the **Task Navigation Panel**, click on the **Administration** tab.
2	Open the **Backup and Restore** folder.
3	Click **Restore**. The **Restore** pane appears.
4	In the **Restore From** field, select **Factory Default**.
5	Click the **Restore** button. The S**elect Components to Restore** pane appears.
6	Select the optional components that you want to include from the backup archive.
7	Click **OK**. A warning window opens and displays information about components that will be affected by the restore operation.
8	Click **Yes** to proceed. A progress window opens. When the operation completes, the Restore Complete window opens.
9	Click **OK**.

--End--

Copyright © 2009 Nortel Networks

BCM 5.0 log management system

The information in this chapter applies to both the BCM50 and the BCM450 platforms running BCM 5.0.

This section describes how to view and manage logs generated by the BCM 5.0 system.

BCM 5.0 log management system navigation

- Performing immediate log transfers (page 182)
- Configuring scheduled log transfers (page 187)
- Transferring log files using the BCM 5.0 Web Page (page 191)
- Using the Log Browser (page 193)
- Viewing log files using other applications (page 197)

Performing immediate log transfers

This section contains information on the following topics:

- Performing an immediate log transfer to a USB storage device (page 182)
- Performing an immediate log transfer to a personal computer (page 183)
- Performing an immediate log transfer to a network folder (page 184)
- Performing an immediate log transfer to an FTP server (page 185)
- Performing an immediate log transfer to an SFTP server (page 186)

Performing an immediate log transfer to a USB storage device

Use the following procedure to transfer a log to a USB storage device.

Attention: When you create a log archive, a high level of CPU usage may occur. This level of CPU is normal during a log management operation.

Copyright © 2009 Nortel Networks

Procedure steps

Step	Action
1	Click the **Administration** tab.
2	Open the **Logs** folder, and then click the **Log Management** task. The Log Management panel opens.
3	Click the **Immediate Log Transfer** tab.
4	In the **Transfer To** selection field, select U**SB Storage Device**.
5	Click the **Transfer** button. A window opens.
6	Select the log file categories that you want to include in the log file transfer. All the log files associated with the selected categories will be transferred.
7	Click the **OK** button. A transfer window opens and displays applicable warnings.
8	Click the **Yes** button to initiate the transfer. The Progress Update window opens. When the log files are transferred, the Transfer Complete window opens.
9	Click the **OK** button. The log archive is saved in the location you specified.

--End--

Performing an immediate log transfer to a personal computer

Use the following procedure to transfer a log to your personal computer.

Attention: When you create a log archive, a high level of CPU usage may occur. This level of CPU is normal during a log management operation.

Procedure steps

Step	Action
1	Click the **Administration** tab.
2	Open the **Logs** folder, and then click the **Log Management** task. The Log Management panel opens.
3	Click the **Immediate Log Transfer** tab.

Copyright © 2009 Nortel Networks

4 In the **Transfer To** selection field, select **My Computer.**

5 Click the Transfer button.

A window opens.

6 Select the log file categories that you want to include in the log file. Click the **OK** button.

A confirmation window opens, and displays applicable warnings.

7 Click the **Yes** button to initiate the transfer.

When the log archive is ready to be saved, the The Save window opens.

8 Select the directory in which you want to save the log file transfer.

9 In the **File Name** field, enter the name of the log file followed by a .tar extension. For example, log1.tar.

Attention: If you do not specify a .tar extension, the transfer proceeds and the file will be written to the specified location. The file, however, will be of an unknown type and your utilities may not operate with it. Rename the file with the extension .tar by right-clicking on the file and renaming it.

10 Click the **Save** button.

The Progress Update window displays while the files are being saved. When the files are saved, the Transfer Complete window opens.

11 Click the **OK** button.

The log file is saved as a .tar file in the location you specified.

--End--

Performing an immediate log transfer to a network folder

Use the following procedure to transfer a log to a network folder.

Attention: When you create a log archive, a high level of CPU usage may occur. This level of CPU is normal during a log management operation.

Procedure steps

Step	Action
1	Click the **Administration** tab.
2	Open the **Logs** folder, and then click the **Log Management** task. The Log Management panel opens.
3	Click the **Immediate Log Transfer** tab.

Copyright © 2009 Nortel Networks

4 In the **Transfer To** selection field, select **Network Folder.**

5 Configure the T**ransfer to Network Folder** attributes.

6 Click the **Transfer** button.

The Transfer window opens.

7 Select the log file categories that you want to include in the log file transfer.

8 Click the **OK** button.

A confirmation window opens, and displays applicable warnings.

9 Click the **Yes** button to initiate the transfer.

The Progress Update window opens. When the log files are transferred, the Transfer Complete window opens.

10 Click the **OK** button.

The log file is saved as a .tar file in the location you specified.

--End--

Variable definitions

Column	Value
Network Folder	Hostname or IP address of the network folder and the resource name. For example, enter \\<server>\<resource>
User Name	User name associated with the network folder
Password	Password associated with the network folder
Directory	Path to the subdirectory, if applicable (optional)

Performing an immediate log transfer to an FTP server

Use the following procedure to transfer a log to an FTP server.

Attention: When you create a log archive, a high level of CPU usage may occur. This level of CPU is normal during a log management operation.

Procedure steps

Step	Action
1	Click the **Administration** tab.
2	Open the **Logs** folder, and then click the **Log Management** task. The Log Management panel opens.

Copyright © 2009 Nortel Networks

3 Click the **Immediate Log Transfer** tab.

4 In the **Transfer To** selection field, select **FTP Server.**

5 Configure the T**ransfer to FTP Server** attributes.

6 Click the **Transfer** button.

The Transfer window opens.

7 Select the log file categories that you want to include in the log file transfer.

8 Click the **OK** button.

A confirmation window opens, and displays applicable warnings.

9 Click the **Yes** button to initiate the transfer.

The Progress Update window opens. When the log files are transferred, the Transfer Complete window opens.

10 Click the **OK** button.

The log file is saved as a .tar file in the location you specified.

--End--

Variable definitions

Column	Value
FTP Server	Hostname or IP address of the FTP server
User Name	User name associated with the FTP server
Password	Password associated with the FTP server
Directory	Path to the subdirectory, if applicable (optional)

Performing an immediate log transfer to an SFTP server

Use the following procedure to transfer a log to an SFTP server.

Attention: When you create a log archive, a high level of CPU usage may occur. This level of CPU is normal during a log management operation.

Procedure steps

Step	Action
1	Click the **Administration** tab.
2	Open the **Logs** folder, and then click the **Log Management** task. The Log Management panel opens.
3	Click the **Immediate Log Transfer** tab.

Copyright © 2009 Nortel Networks

4 In the **Transfer To** selection field, select **SFTP Server.**

5 Configure the T**ransfer to SFTP Server** attributes.

6 Click the **Transfer** button.

The Transfer window opens.

7 Select the log file categories that you want to include in the log file transfer.

8 Click the **OK** button.

A confirmation window opens, and displays applicable warnings.

9 Click the **Yes** button to initiate the transfer.

The Progress Update window opens. When the log files are transferred, the Transfer Complete window opens.

10 Click the **OK** button.

The log file is saved as a .tar file in the location you specified.

--End--

Variable definitions

Column	Value
SFTP Server	Hostname or IP address of the SFTP server. For SFTP storage locations, you must use an SCP server. BCM 5.0 supports Open SSH 3.7.
User Name	User name associated with the SFTP server
Password	Password associated with the SFTP server.
Directory	Path to the subdirectory, if applicable (optional)

Configuring scheduled log transfers

You can schedule a log transfer for a future date for a single transfer, or for recurring future transfers. You can create multiple schedule entries. For example, you can transfer Operational logs and System Information logs on a daily basis and transfer Diagnostic and Sensitive Information logs on a weekly basis.

This section contains information on the following topics:

- Creating a scheduled log transfer (page 187)
- Modifying a scheduled log transfer (page 189)
- Deleting a scheduled log transfer (page 190)

Creating a scheduled log transfer

Use the following procedure to schedule a log transfer.

Copyright © 2009 Nortel Networks

Procedure steps

Step	Action
1	Click the **Administration** tab, and then open the **Logs** folder.
2	Click the **Log Management** task. The Log Management panel opens.
3	Click the **Scheduled Log Transfer** tab.
4	T he Scheduled Log Transfer panel opens.
5	Click the **Add** button. The Add Scheduled Transfer window opens.
6	In the **Transfer To** selection field, select the location to which you want to transfer the log files: • Network Folder • USB Storage Device • FTP Server • SFTP Server
7	Configure the T**ransfer To** attributes.
8	Click the **OK** button. The Add Scheduled Transfer window opens.
9	In the **Memo** field, enter a description of the log transfer.
10	Select the log file categories that you want to include in the log file transfer.
11	Configure the schedule attributes.
12	Click the **OK** button. The scheduled log transfer is displayed in the Scheduled Log Transfer table. **Note:** If you select Network Folder, FTP Server, or SFTP Server as the Transfer To option, a Verify Connection Parameter dialog box displays. You can use this dialog box to test the connection to the destination, or continue without testing.

--End--

Copyright © 2009 Nortel Networks

Variable definitions

Column	Value
Network Folder	Hostname or IP address of the FTP server
User Name	User name associated with the FTP server
Password	Password associated with the FTP server
Directory	Path to the subdirectory, if applicable (optional)

Variable definitions

Column	Value
Memo	Enter a note for the scheduled log transfer, as applicable.
Recurrence	Select how often the scheduled transfer is to occur. Options are: Once, Daily, Weekly, Monthly. Depending on the option you choose, the window displays selections for the month and day of month. If you select Weekly, days of the week check boxes appear so that you can select the days on which the transfer will occur.
Month	Select the month in which the scheduled transfer is to occur. Displays only when you select Once as the Recurrence.
Day of Month	Select the day of the month on which the scheduled transfer is to occur. Displays only when you select Once or Monthly as the Recurrence.
Time	Select the time at which the scheduled transfer is to occur. Click the field to display a Time box, where you can specify the hour, minute, second, and whether the time occurs in morning or afternoon. Close the box when you have finished specify the time.

Modifying a scheduled log transfer

Use the following procedure to modify a scheduled log transfer.

Procedure steps

Step	Action
1	Click the **Administration** tab, and then open the **Logs** folder.
2	Click the **Log Management** task. The Log Management panel opens.

Copyright © 2009 Nortel Networks

3 Click the **Scheduled Log Transfer** tab.

4 In the **Scheduled Log Transfer** table, select a scheduled log file transfer.

5 Click the **Modify** button.

The Modify Scheduled Transfer window opens.

6 In the **Transfer To** field, modify the destination as appropriate.

7 In the **Memo** field, modify the memo for the scheduled log transfer as appropriate.

8 In the **Optional Components** area, modify the log file categories you want to include or exclude from the transfer, as appropriate.

9 Click the **OK** button.

The modified scheduled log transfer is displayed in the Scheduled Log Transfer table.

--End--

Deleting a scheduled log transfer

Use the following procedure to delete a log transfer that you have scheduled.

Procedure steps

Step	Action
1	Click the **Administration** tab, and then open the **Logs** folder.
2	Click the **Log Management** task. The Log Management panel opens.
3	Click the **Scheduled Log Transfer** tab.
4	In the **Scheduled Log Transfer t**able, select a schedule.
5	Click the **Delete** button. A confirmation window opens.
6	Click the **Yes** button. The scheduled log transfer is deleted from the Scheduled Log Transfer table.

--End--

Copyright © 2009 Nortel Networks

Transferring log files using the BCM 5.0 Web Page

If you do not have access to Element Manager, you can transfer log files using the Web Page. When you use the BCM 5.0 Web Page to transfer log files, you cannot choose the log file categories to transfer; all the log files in all the categories will be transferred.

This section contains information on the following topics:

- Using the BCM 5.0 Web Page to transfer logs to your personal computer (page 191)
- Using the BCM 5.0 Web Page to transfer logs to other destinations (page 192)

Using the BCM 5.0 Web Page to transfer logs to your personal computer

Use the following procedure to transfer logs from the BCM 5.0 Web Page to your personal computer.

Procedure steps

Step	Action
1	In your web browser, type the IP address of the BCM 5.0 and click the **Go** button. The login screen opens.
2	Log in to the BCM 5.0 using the same username and password that you use to log into the Element Manager. The BCM 5.0 Web page opens.
3	Click the **Administrators Applications** link.
4	Click the **BCM Logs** link. The Retrieve Log Files panel appears.
5	Click one of the three options for file transfer: • **Transfer to My Computer** • **Store on USB Memory** • **Send to**
6	If you select the **Send to** radio button, select a destination from the drop-down list, otherwise, go to the next step.
7	Click the **Submit** button at the bottom of the screen. A Working dialog box displays. When log retrieval is complete, the dialog box displays “Success.”
8	Click the **Click Here to Transfer Logs** link. The File Download screen opens.

Copyright © 2009 Nortel Networks

9	Click the **Save** button.
10	The **Save As** screen opens.
11	Specify the location where you want to save the log file transfer, and enter a name for the file in the **File Name** field.
12	Click the **Save** button. The file is saved.

--End--

Using the BCM 5.0 Web Page to transfer logs to other destinations

Use the following procedure to transfer logs from the BCM 5.0 Web Page to any of the following destinations:

- a Windows shared folder
- an FTP server
- an SFTP server.

Procedure steps

Step	Action
1	In your web browser, type the IP address of the BCM 5.0 and click the Go button. The login screen opens.
2	Log in to the BCM 5.0 using the same user name and password that you use to log into Element Manager. The BCM 5.0Web page opens.
3	Click the **Administrators Applications** link.
4	Click the **BCM Logs** link.
5	In the **Retrieve Log Files** area, select a destination for the retrieved logs: • Transfer to my computer • Store on USB memory • Send to:
6	If you selected a **Send To** option, configure the destination attributes for the option you chose. The options are FTP, SFTP, or Windows Shared Folder.
7	Click the **Submit** button. A Working screen opens. When the log retrieval is complete, the screen displays “Done.”

Copyright © 2009 Nortel Networks

8 Click the **Click Here to Download Logs** link.

The File Download screen opens.

9 Click the **Save** button to save the backup.tar file.

The Save As screen opens.

10 Specify the location where you want to save the zipped file, and enter a name for the file in the **File Name** field. The file must have a .tar extension. For example, log2.tar.

11 Click the **Save** button.

The file is saved.

--End--

Variable definitions

Column	Value
Remote Resource	Enter the FTP or SFTP address or the network pathway, as appropriate. For SFTP storage locations, you must use an SCP server. BCM 5.0 supports OpenSSH 3.7.
Directory	Enter the path of the directory to which you want to transfer the log files.
User ID	Enter the user ID associated with the remote resource.
Password	Enter the password associated with the remote resource. This option does not apply when the destination is an SFTP server.

Using the Log Browser

Once you have transferred log files using the Element Manager or the BCM 5.0 Web page, you can extract the log files using the Element Manager Log Browser. You must extract the log files from the log archive before you can view them using the Element Manager Log Browser.

Prerequisites

Before you extract log files, create a folder in your directory for each archive and then follow the procedure Extracting the log file (page 194) to extract the archive into the appropriate folder.

Copyright © 2009 Nortel Networks

Extracting the log file

Use the following steps to extract the log files from the log archive.

Procedure steps

Step	Action
1	Left-click a network element. The network element may be connected or disconnected.
2	Select **File, View Network Element Logs**. The View Log File window opens.
3	Select the directory or location that contains the transferred BCM 5.0 log file tar archive.
4	Select **Network Element log archives (*.tar)** in the **File of Type** field.
5	Select the archive file, and then click the **Open** button. A confirmation dialog box opens.
6	Click the **Yes** button to extract the contents of the zipped file. A message dialog box opens and displays a success or error message for each extracted file.
7	Click the **OK** button to acknowledge an individual message, or click **OK to All** to acknowledge all messages once the extraction is complete. Alternatively, you can wait until the extraction is complete, and then close the window. Once the files are extracted, the View Log File window opens.
8	Select a log file folder, for example operationalLogs.tar. Select .systemlog from the **Files of type** field to show only log files that the Log Browser can display.
9	Click the **Open** button. The log file folder opens and the log files that it contains are displayed.
10	Select a .systemlog file or a .log file, and click the **Open** button. The Log Browser opens and displays retrieval results for the selected log file.

--End--

Specifying retrieval criteria

Use the following steps to reset the status LED.

Copyright © 2009 Nortel Networks

Procedure steps

Step	Action
1	In the Log Browser, ensure that the R**etrieval Area** is open by clicking on the arrow next to the **Retrieval Criteria** field.
2	In the **Retrieval Criteria** table, select an attribute.
3	The Criteria Definition area displays the corresponding details for the selected attribute.
4	Specify details for the selected attribute, as appropriate.
5	Click the **Retrieve** button. While the Log Browser is retrieving records, a progress counter displays the elapsed time and the number of records found.The results of the retrieval are displayed in the Retrieval Results list area.

--End--

Filtering retrieval results

The Log Browser displays all the records it has found, to a maximum display limit of 3000 records. Most log files exceed this limit; when this happens, you cannot view the remaining records in the log file. If this is the case, use filter criteria for a specific date or dates, or filter according to alarm severity, to reduce the number of results.

Procedure steps

Step	Action
1	In the **Retrieval Results** table, select or clear the checkboxes in the Show area.
2	To sort the contents of the Retrieval Results table. click on the table headings.

--End--

Copyright © 2009 Nortel Networks

Viewing details for a single log record

Use the following steps to view details for a single log record.

Procedure steps

Step	Action
1	In the **Retrieval Results** list table, select a log record. Log details for the selected log record are displayed in the **Log Details** area.

--End--

Viewing details for multiple log records

Use the following steps to view details for multiple log records.

Procedure steps

Step	Action
1	In the **Retrieval Results** list table, hold down the **Shift** key and select log records to select multiple contiguous log records. Log details for the selected log records are displayed in the **Log Details** area, separated by dashed lines.
2	In the **Retrieval Results** list table, hold down the C**ontrol** key and select log records to select multiple non-contiguous log records. Log details for the selected log records are displayed in the Log Details area, separated by dashed lines.
3	To toggle between viewing log details for single and multiple log records separated by a dashed line, click the **View Control** buttons to the right of the **Log Details** area.

--End--

Selecting log filters

Use the following procedure to select log filters.

Procedure steps

Step	Action
1	Click the **Administration** tab.
2	Open the **Logs** folder, and then click **Log Filtering**.

Copyright © 2009 Nortel Networks

The Log Filtering screen appears.

3 Select the type of **Diagnostic Log Filter** you want from the list.

4 Select the type of **Sensitive Log Filter** you want from the list.

--End--

Viewing log files using other applications

Using the Element Manager Log Browser to view log files enables you to control how you view log events by means of retrieval criteria and sorting tools. You can also view log files using other applications if the Element Manager is not available.:

- use WordPad to view .systemlog and .log files (tab delimited)
- open the files using Microsoft Word
- open the files using Microsoft Excel

Copyright © 2009 Nortel Networks

BCM 5.0 hardware inventory

The information in this chapter applies to both the BCM50 and the BCM450 platforms running BCM 5.0.

This section describes how to use the hardware inventory to display and update information about BCM450 and BCM50 hardware.

BCM 5.0 hardware inventory navigation

- Viewing and updating information about the BCM 5.0 system (page 198)
- Viewing information about devices (page 207)
- Viewing additional information (page 208)

Viewing and updating information about the BCM 5.0 system

This section contains information on the following topics:

- Viewing and updating information about the main unit (page 198)
- Viewing expansion daughter card information for BCM450 (page 200)
- Viewing information about Daughter Cards on BCM50 (page 201)
- Viewing and updating information about media bay modules (page 202)
- Viewing information about hard disk drives (page 203)
- Enabling Disk Mirroring (page 204)
- Viewing and updating system expansion information (page 204)
- Viewing and updating information about digital mobility controllers (page 205)

Viewing and updating information about the main unit

Use the following procedure to view and update information about the main unit.

Procedure steps

Step	Action

Copyright © 2009 Nortel Networks

1. In the BCM Element Manager, connect to a BCM 5.0 device.
2. Select **Administration**, **General**, **Hardware Inventory**.

   The Hardware Inventory panel opens and displays the BCM System tab.
3. View the information displayed in the BCM 5.0 main unit area.
4. If you want to add or update the asset ID for the BCM 5.0 main unit, enter an asset ID in the **Customer asset ID** field.

--End--

Variable definitions

Field Name	Field Description	Field Value	Read/Write
System*	An arbitrary string that uniquely identifies the Physical Element and serves as the Element's key	Nortel BCM 5.0 Communications Server	Read
Type*	The type of the physical entity	Chassis	Read
System name*	A user-friendly name for the object	System name of the BCM 5.0	Read
Chassis type (BCM450 only)	The type of chassis used	Can be one of following, Standard, Standard-Redundant, Legacy, or Legacy-Redundant	Read
Model	The model type	Can be BCM50, BCM50a, BCM50b, BCM50e, BCM50ab, BCM50eb, or BCM450.	Read
Model*	A textual description of the object	example ‘BCM 5.0 Telephony Only’	Read
Serial number	The serial number of the BCM 5.0 unit	Nortel System Serial Number	Read
Customer asset ID*	Customer-defined tracking number	Initially zero	Write

Attention: Fields marked with an asterisk (*) can also be remotely queried by SNMP using the Entity MIB.

Copyright © 2009 Nortel Networks

Viewing expansion daughter card information for BCM450

Use the following procedure to view information about the expansion daughter card. The Expansion Daughter Cards area on the BCM450 System tab provides information about the daughter cards connected to the BCM450 main unit. Expansion daughter cards are not available for the BCM50 system.

Procedure steps

Step	Action
1	In the BCM Element Manager, connect to a BCM450 device.
2	Select **Administration, General, Hardware Inventory**. The **Hardware Inventory** panel opens, and displays the **BCM System** tab.
3	View the information displayed in the **Expansion Daughter Cards** area.

--End--

Copyright © 2009 Nortel Networks

Variable definitions

Field Name	Field Description	Field Value	Read/Write
Location	The location of the expansion daughter card	Alphanumeric	Read
Resource	The name or type of the expansion daughter card.	Alphanumeric	Read
FRU PEC Code	The PEC code of the field-replaceable unit.	Numeric	Read
FRU CPC Code	The CPC code of the field-replaceable unit.	Numeric	Read
Serial Number	The manufacturer's serial number of the field-replaceable unit.	Numeric	Read
Firmware Version	The firmware version of the unit.	Numeric	Read
Hardware Version	The hardware version of the unit	Numeric	Read
FRU	Indicates if the unit is considered field replace-able by the manufacturer.	True (if checked)	Read

Viewing information about Daughter Cards on BCM50

Use the following procedure to view information about daughter cards on BCM50. The Daughter Cards provides information about Router and BRI cards on BCM50.

Procedure steps

Step	Action
1	In the BCM Element Manager, connect to a BCM50 device.
2	Select **Administration, General, Hardware Inventory**. The **Hardware Inventory** panel opens, and displays the **BCM System** tab.
3	View the information displayed in the **Daughter Cards** area.

--End--

Copyright © 2009 Nortel Networks

Variable definitions

Field Name	Field Description	Field Value	Read/Write
CDC CPC code	The CPC code of the compact daughter card.	Alphanumeric	Read
CDC PEC code	The PEC code of the compact daughter card.	Alphanumeric	Read
CDC serial number	The serial number of the compact daughter card.	Alphanumeric	Read
CDC hardware version	The hardware version of the compact daughter card.	Numeric	Read

Viewing and updating information about media bay modules

Use the following procedure to view information about the media bay modules. The Media Bay Modules area on the BCM450 System tab provides information about the MBMs connected to the BCM450 main unit. For viewing and updating information about MBM on BCM50, see Viewing and updating system expansion information (page 204)

Procedure steps

Step	Action
1	In the BCM Element Manager, connect to a BCM450 device.
2	Select **Administration, General, Hardware Inventory**. The **Hardware Inventory** panel opens, and displays the **BCM System** tab.
3	View the information displayed in the **Media Bay Modules** area.
4	To update information about the media bay modules, enter an ID in the **Asset ID** field, and enter any other information in the **Details** field.

--End--

Copyright © 2009 Nortel Networks

Variable definitions

Field Name	Field Description	Field Value	Read/Write
Instance	Specifies the location of the MBM.	Alphanumeric	Read
Resource	The name or type of the MBM.	Alphanumeric	Read
Asset ID*	Customer defined tracking number	Initially zero	Write
Details	Enter optional details about the MBM.	Numeric	Write
FRU	Indicates if the unit is considered field replaceable by the manufacturer.	True (if checked)	Read

Viewing information about hard disk drives

Use the following procedure to view information about the hard disk drives.

Procedure steps

Step	Action
1	In the BCM Element Manager, connect to a BCM 5.0 device.
2	Select **Administration, General, Hardware Inventory**. The **Hardware Inventory** panel opens, and displays the **BCM System** tab.
3	View the information displayed in the **Hard Disk Drives** area.

--End--

Copyright © 2009 Nortel Networks

Variable definitions

Field Name	Field Description	Field Value	Read/Write
Instance	Identifies the location of the hard drive.	Numeric	Read
Resource	The type of hard disk installed.	Alphanumeric	Read
Order PEC Code	The PEC code of the hard drive.	Alphanumeric	Read
Serial Number	The serial number of the hard drive.	Alphanumeric	Read
Firmware version	The firmware version of the hard drive.	Alphanumeric	Read
FRU	Indicates if the unit is considered field replace-able by the manufacturer.	True (if checked)	Read

Enabling Disk Mirroring

If you have a secondary hard disk drive installed, you can enable Disk Mirroring to maintain a backup of your primary hard disk drive.

Procedure steps

Step	Action
1	In Business Element Manager, go to **Administration >System Metrics>Disk Mirroring**.
2	In the Operation mode field, under the Settings sub-panel, select Mirror Mode to enable disk mirroring to maintain a redundant hard disk if you have two hard disks installed.

--End--

Viewing and updating system expansion information

Use the following procedure to view system expansion information. The BCM System Expansion area in the BCM System tab provides information about the expansion chassis for BCM450, or any expansion modules connected to a BCM50 system.

Copyright © 2009 Nortel Networks

Procedure steps

Step	Action
1	In the BCM Element Manager, connect to a BCM 5.0 device.
2	Select **Administration, General, Hardware Inventory**.
	The **Hardware Inventory** panel opens, and displays the **BCM System** tab.
3	View the information displayed in the **BCM System Expansion** area.
4	To update information about the expansion chassis, click the **Present** checkbox to indicate that an expansion chassis is installed.
5	To add a customer-defined asset number, enter an ID in the **Asset ID** field.

--End--

Variable definitions

Field Name	Field Description	Field Value	Read/Write
Resource (BCM450 only)	The name of the expansion chassis.	Alphanumeric	Read
Asset ID*	Customer defined tracking number	Initially zero	Write
Expansion chassis (BCM50 only)	Lists the number of the expansion chassis	1 or 2	Read
Present	Indicates if an expansion unit to main unit is present	Yes (if checked)	Read
Field Replaceable	Indicates if the unit is considered field replaceable by the manufacturer.	True (if checked)	Read
MBM (BCM50 only)	Use the drop-down menu to identify the type of MBM, whether it is a DSM16 or DSM32	Drop-down menu	Write
MBM Asset ID (BCM50 only)	Enter the asset ID of the MBM	Numeric	Write

Viewing and updating information about digital mobility controllers

Use the following procedure to view and update information about the digital mobility controllers.

Copyright © 2009 Nortel Networks

Procedure steps

Step	Action
1	In the BCM Element Manager, connect to a BCM 5.0 device.
2	Select **Administration, General, Hardware Inventory**. The **Hardware Inventory** panel opens, and displays the **BCM System** tab.
3	View the information displayed in the **Digital Mobility Controllers** area.
4	To enter information about the digital mobility controller, select the row and click in the appropriate cell.

--End--

Variable definitions

Field Name	Field Description	Field Value	Read/Write
Instance	Identifies the location of the DMC.	Numeric	Read/Write
Resource	The name of the DMC.	Alphanumeric	Read/Write
Asset ID	Customer defined tracking number	Initially zero	Read/Write
FRU	Indicates if the unit is considered field replaceable by the manufacturer.	True (if checked)	Read/Write

Viewing and updating other system information

Use the following procedure to view or update other system information. The Other Information area in the Additional Information tab displays other information associated with the selected BCM 5.0 system, such as the name of the administrator and their contact information, and the location of the BCM 5.0 system. You can add or update this information. The date on which this information is updated is displayed BCM 5.0 area, in accordance with “LastChangeTime” of the Entity MIB.

Procedure steps

Step	Action
1	Select **Administration, General, Hardware Inventory.** The **Hardware Inventory p**anel opens.

Copyright © 2009 Nortel Networks

2 Select the **Additional Information** tab.

3 View the information displayed in the **Other Information** area at the bottom of the screen.

4 If you want to add or update information about the owner or administrator of the BCM 5.0 system, enter information in the **Owner Name** field.

5 If you want to add or update other information about the BCM 5.0 system, enter it in the **Additional Notes** field.

--End--

Variable definitions

Field Name	Field Description	Field Value	Read/Write
Owner name	The owner's name or any other information, such as the administrator's name and contact information	Up to 256 characters	Write
Additional Notes	Additional information about this system.	Up to 256 characters Write	Write
Last change for the system	Date and time when the information was last modified	example '2004-04-16 09: 12:00"	Read

Viewing information about devices

The Devices tab displays information about all devices attached to the BCM 5.0. These devices may include:

- digital sets
- analog devices
- IP sets, including IP clients

You can view all Directory Numbers (DNs) and the type of set associated with the DN

Viewing information about attached devices

Use the following procedure to view information about devices attached to the system.

Procedure steps

Step	Action

Copyright © 2009 Nortel Networks

1 In the BCM 5.0 Element Manager, connect to a BCM 5.0 device.

2 Select **Administration, General, Hardware Inventory.**

3 The **Hardware Inventory** panel opens.

4 Click the **Devices** tab.

5 View the information displayed in the **Attached Devices** table.

--End--

Variable definitions

Field Name	Field Description	Field Value	Read/Write
DN	Directory Number	In accordance with DN numbering system	Read
Model	Type of device or set	example T7316 or I2004	Read

Viewing additional information

Use the Additional Information tab to display additional information about the BCM 5.0 main unit, such as:

- details about the manufacturer and the manufacture date
- hardware version details
- serial number details

You require this information only when a field issue requires the identification of certain systems. Items marked on the Element Manager as read-only are detected by the BCM 5.0. For items that are not auto-detected, the Element Manager provides checkboxes, pull-down menus, and fields that the administrator can populate to indicated that these resources are present.

Viewing additional information

Use the following steps to view additional information about the hardware inventory.

Procedure steps

Step	Action
1	In the BCM 5.0 Element Manager, connect to a BCM 5.0 device.
2	Select **Administration, General, Hardware Inventory**. The **Hardware Inventory** panel opens.
3	Click the **Additional Information** tab.

Copyright © 2009 Nortel Networks

4 View the information displayed in the **Additional Information** table.

--End--

Variable definitions

Field Name	Read/Write
Manufacturer*	Read
Manufacture date	Read
Hardware version (BCM50 only)	Read
CSC CPC code (BCM50 only)	Read
CSC serial number (BCM50 only)	Read
CSC hardware version (BCM50 only)	Read
BFT/BMB	
BFT FRU PEC code (BCM 450 only)	Read
BFT FRU CPC code (BCM 450 only)	Read
BFT field replaceable (BCM 450 only)	Read
BMB type (BCM 450 only)	Read
BMB serial number (BCM 450 only)	Read
BMB PCP PEC code (BCM 450 only)	Read
BMB PCP CPC code (BCM 450 only)	Read
BMB hardware version (BCM 450 only)	Read
Power Supply	
Resource (BCM 450 only)	Read
Field replaceable (BCM 450 only)	Read
Main Chassis Fans	
Instance (BCM 450 only)	Read
FRU (BCM 450 only)	Read

Attention: Fields marked with an asterisk (*) can also be remotely queried by SNMP using the Entity MIB.

Copyright © 2009 Nortel Networks

BCM 5.0 software updates

The information in this chapter applies to both the BCM50 and the BCM450 platforms running BCM 5.0.

This section describes how to manage BCM 5.0 software updates.

BCM 5.0 software updates navigation

- Viewing the software update history (page 210)
- Obtaining BCM 5.0 software update (page 211)
- Checking the status of a software update (page 212)
- Applying a software update (page 212)
- Scheduling a software update (page 220)
- Modifying a scheduled software update (page 223)
- Deleting a scheduled software update (page 224)
- Viewing the software inventory (page 225)
- Removing a software update (page 225)

Viewing the software update history

Use the following procedure to view the history of updates that have been applied to the BCM 5.0 system.

Using the Software Update History panel, you can view the history of all software updates, including software upgrades, that have been applied to the BCM 5.0 since the it was shipped. You can:

- view the current software release level of the BCM 5.0
- view a history of all software updates (including upgrades) applied to the BCM 5.0
- view release notes that apply to a particular software update

Attention: Performing a Level 2 reset under any circumstance causes the Software Update History to be lost.

Copyright © 2009 Nortel Networks

Procedure steps

Step	Action
1	In the task panel, click the **Administration** tab.
2	Open the **Software Management** folder, and then click the **Software Update History** task. The Software Update History panel opens
3	View the updates in the **Software Update History** table. If software updates have not been applied to your BCM 5.0, the table is empty.
4	To view release notes about a particular software update, select the update in the table. Release notes containing details about the software update are displayed in the Release Notes panel below the table.

--End--

Variable definitions

Columns	Description
Date	The date and time that the software update was applied.
Category	The software update category (Scheduled, Removed, Modified, Applied).
Name	The name of the software update.
Version	The version of the software update.
Description	A brief description of the software update.
Removable	Indicates whether the software update can be removed from the BCM 5.0. If it can be removed, the check box is checked.

Obtaining BCM 5.0 software update

Use the following procedure to obtain a software update. Before you can apply a software update to your BCM 5.0, you must obtain the software update and unzip the file. Authorized Nortel partners can download BCM 5.0 software updates from the Nortel Technical Support web page.

Procedure steps

Step	Action
1	In your web browser, enter www.nortel.com/support and then click the **Go** button. The Nortel Technical Support Web page opens.

Copyright © 2009 Nortel Networks

2	Download the required updates.
3	Create a directory for each update and unzip the downloaded file into a directory.

--End--

Checking the status of a software update

Use this procedure to view the status of software updates that are transferring or waiting to be transferred, or that are waiting to be applied.

Procedure steps

Step	Action
1	In the task navigation panel, click the **Administration** tab.
2	Open the **Software Management** folder, and then click the **Software Update** task. The Software Update panel opens and displays the Updates in Progress tab.
3	View the details in the **Updates in Progress** table. Once a software update is complete, the entry is removed from the **Updates in Progress** table and a new entry is added to the **Software Update History** table to document the installation of the software update.

--End--

Applying a software update

Use the information in this section to apply a software update.

Once you have downloaded a software update from the Nortel Technical Support Web page, you can apply it to the BCM 5.0. You can apply one software update at a time. For multiple software updates, repeat the following procedure until each update has been applied. When you have several updates to apply, any software updates that require the system to reboot should be applied last. Information about each update is available when you click the Show Details button.

Copyright © 2009 Nortel Networks

This section contains information on the following topics:

- Applying a software update from your personal computer (page 213)
- Applying a software update from a USB storage device (page 214)
- Applying a software update from a network folder (page 216)
- Applying a software update from an FTP server (page 217)
- Applying a software update from an HTTP server (page 219)

Applying a software update from your personal computer

Use the following steps to apply an update from your personal computer.

CAUTION

Applying a software update to the BCM 5.0 is a service-affecting operation. Nortel recommends that you schedule updates for low-traffic hours.

CAUTION

If a software update has a checkmark applied against it in the Reboot Req'd column of the Find Software Updates window, the BCM 5.0 will automatically reboot as soon as the update has been applied. You will not receive a reboot confirmation before the reboot occurs.

Procedure steps

Step	Action
1	In the task navigation panel, click the **Configuration** tab.
2	Select **System, Date and Time** and verify that the date, time, and time zone are correctly set.
3	In the task navigation panel, click the **Administration** tab.
4	Open the **Software Management** folder, and then click the **Software Updates** task. The Software Update panel opens. The Updates in Progress tab is open.
5	Click the **Get New Updates** button.The **Get New Updates** window opens.
6	Select **My Computer** from the **Retrieve From** selection field.
7	Click the **Browse** button. The **Select** window opens.
8	Navigate to the directory where you unzipped the update file and click **Select**.

Copyright © 2009 Nortel Networks

Attention: The Select dialog displays directories only and does not show the contents of the directories.

9 Select the location from which you want to retrieve the update.

The Find Software Updates window opens and displays a list of updates found in the specified location.

Attention: If the information in the **Find Software Updates** window indicates that you are applying an upgrade rather than an update, you will need to generate a keycode before proceeding.

10 Select an update. The update must have a status of “Available.”

11 To view details about the update, click the **Show Details** button.

The Details for Update window opens and displays any details about the update.

12 Click the **OK** button to close the details window.

13 Click the **Apply** button to apply the update. A warning dialog box opens.

14 Click the **OK** button.

The Software Update Complete confirmation window opens.

15 A dialog box opens to display the options available for this update. The options available depend on the update that you are applying. Select the appropriate options and click the **OK** button. If no options are available, click the **OK** button to continue.

16 The **Updates in Progress** table lists the update as **In Progress**. Click the **OK** button.

A software update that has the Reboot Required field checked automatically restarts the BCM 5.0 once the update has been applied.

--End--

Applying a software update from a USB storage device

Use this procedure to apply an update from a USB storage device.

Copyright © 2009 Nortel Networks

Prerequisites

Before you apply an update from a USB storage device, make sure that:

- the USB storage device is formatted as a FAT32 device
- you know the path to the location of the updates on the device
- the device is connected to the BCM 5.0
- the size of the software update is not greater than the capacity of the storage device

CAUTION

Applying a software update to the BCM 5.0 is a service-affecting operation. Nortel recommends that you schedule updates for low-traffic hours.

CAUTION

If a software update has a checkmark applied against it in the Reboot Req'd column of the Find Software Updates window, the BCM 5.0 will automatically reboot as soon as the update has been applied. You will not receive a reboot confirmation before the reboot occurs.

CAUTION

Do not remove the USB storage device until the update is applied. Removing the device before the update has been applied may seriously harm the integrity of your system.

Procedure steps

Step	Action
1	In the task panel, click the **Administration** tab.
2	Open the **Software Management** folder, and then click the **Software Update** task. The Software Update panel opens. The Updates in Progress tab is open.
3	Click the **Get New Updates** button. The **Get New Updates** window opens.
4	Select **USB Storage Device** from the **Retrieve From** selection field.
5	Enter the path to the location of the update in the **Directory** field. You must enter the complete path. Click the **OK** button. The Find Software Updates window opens and displays a list of updates found in the specified location.
6	Select an update. The update must have a status of "Available".

Copyright © 2009 Nortel Networks

7	Click the **Apply** button. A confirmation window opens.
8	Click the **Yes** button. The Software Update Complete confirmation window opens.
9	Click the **OK** button. The Updates in Progress table lists the update as “In Progress”. A software update that has the Reboot Required field checked will automatically reboot the BCM 5.0 once the update has been applied.

--End--

Applying a software update from a network folder

Use this procedure to apply an update from a network folder.

CAUTION

Applying a software update to the BCM 5.0 is a service-affecting operation. Nortel recommends that you schedule updates for low-traffic hours.

CAUTION

If a software update has a checkmark applied against it in the Reboot Req’d column of the Find Software Updates window, the BCM 5.0 will automatically reboot as soon as the update has been applied. You will not receive a reboot confirmation before the reboot occurs.

Procedure steps

Step	Action
1	In the task panel, click the **Administration** tab.
2	Open the **Software Management** folder, and then click the **Software Update** task. The Software Update panel opens. The Updates in Progress tab is open.
3	Click the **Get New Updates** button. The **Get New Updates** window opens.
4	Select **Network Folder** from the **Retrieve From** selection field.
5	Configure the network folder attributes. Click the **OK** button. T he Find Software Updates window opens and displays a list of updates found in the specified location.
6	Select an update. The update must have a status of “Available”

Copyright © 2009 Nortel Networks

7 Click the **Apply** button.

A confirmation window opens.

8 Click the **Yes** button. The **Software Update Complete** confirmation window opens.

9 Click the **OK** button.

The Updates in Progress table lists the update as “In Progress”. A software update that has the Reboot Required field checked will automatically reboot the BCM 5.0 once the update has been applied.

--End--

Variable definitions

Attribute	Action
Network Folder	Enter the IP address or host name of the network folder and the resource name. For example, enter \\<hostname>\<resource>.
User Name	Enter the user name associated with the shared folder.
Password	Enter the password of the user.
Directory	Enter the path to the subdirectory of the network folder (optional).

Applying a software update from an FTP server

Use this procedure to apply an update from an FTP server.

CAUTION

Applying a software update to the BCM 5.0 is a service-affecting operation. Nortel recommends that you schedule updates for low-traffic hours.

CAUTION

If a software update has a checkmark applied against it in the Reboot Req’d column of the Find Software Updates window, the BCM 5.0 will automatically reboot as soon as the update has been applied. You will not receive a reboot confirmation before the reboot occurs.

Copyright © 2009 Nortel Networks

Procedure steps

Step	Action
1	In the task panel, click the **Administration** tab.
2	Open the **Software Management** folder, and then click the **Software Update** task. The Software Update panel opens. The Updates in Progress tab is open.
3	Click the **Get New Updates** button. The Get New Updates window opens.
4	Select **FTP Server** from the **Retrieve From** selection field.
5	Configure the **FTP Server** attributes.
6	Click the **OK** button. The Find Software Updates window opens and displays a list of updates found in the specified location.
7	Select an update. The update must have a status of “Available”.
8	Click the **Apply** button. A confirmation window opens.
9	Click the **Yes** button. The Software Update Complete confirmation window opens.
10	Click the **OK** button. The Updates in Progress table lists the update as “In Progress”. A software update that has the Reboot Required field checked will automatically reboot the BCM 5.0 once the update has been applied.

--End--

Copyright © 2009 Nortel Networks

Variable definitions

Attribute	Description
FTP Server	Enter the IP address or host name of the remote computer, and the port number if required.
User Name	Enter the user name associated with the FTP server.
Password	Enter the user name associated with the FTP server.
Directory	Enter the path to the location of the update. The path is relative to the root of the FTP server you are logging into. For example, if the root of the FTP server you have logged into is /public and your patches are located under /public/patches, you would enter patches as the directory.

Applying a software update from an HTTP server

Use this procedure to apply an update from an HTTP server.

CAUTION

Applying a software update to the BCM 5.0 is a service-affecting operation. Nortel recommends that you schedule updates for low-traffic hours.

CAUTION

If a software update has a checkmark applied against it in the Reboot Req'd column of the Find Software Updates window, the BCM 5.0 will automatically reboot as soon as the update has been applied. You will not receive a reboot confirmation before the reboot occurs.

Attention: The BCM 5.0 supports only Apache web servers as HTTP servers. You must enable automatic index generation on the HTTP server for the directory where the update is located.

Procedure steps

Step	Action
1	In the task panel, click the **Administration** tab.
2	Open the **Software Management** folder, and then click the **Software Update** task. The Software Update panel opens. The Updates in Progress tab is open.
3	Click the **Get New Updates** button. The Get New Updates window opens.

Copyright © 2009 Nortel Networks

4 Select HTTP Server from the **Retrieve From** selection field.

5 Configure the **HTTP Server** attributes.

6 Click the **OK** button.

The Find Software Updates window opens and displays a list of updates found in the specified location.

7 Select an update. The update must have a status of “Available”.

8 Click the **Apply** button.

A confirmation window opens.

9 Click the **Yes** button.

The Software Update Complete confirmation window opens.

10 Click the **OK** button.

The Updates in Progress table lists the update as In Progress. A software update that has the Reboot Required field checked will automatically reboot the BCM 5.0 once the update has been applied.

--End--

Variable definitions

Attribute	Action
HTTP Server	Enter the IP address or host name of the remote computer, and the port number if required.
Use HTTPS	Check this box if the HTTP server requires SSL.
User Name	Enter the user name associated with the HTTP server.
Password	Enter the password of the user.
Directory	Enter the path to the location of the update. The path is relative to the root of the HTTP server you are logging into. For example, if the root of the HTTP server you have logged into is /public and your patches are located under /public/patches, you enter patches as the directory.

Scheduling a software update

You can apply a software update to the BCM 5.0 at a future date by creating a schedule. A scheduled software update is displayed in the Scheduled Updates tab. You can schedule only one update at a time.

Copyright © 2009 Nortel Networks

You can view, modify, or delete a scheduled software update. When you schedule a software update, the device where the update is stored (such as a USB device) must be connected to the BCM 5.0 when you create the schedule.

CAUTION
Applying a software update to the BCM 5.0 is a service-affecting operation. Nortel recommends that you schedule updates for low-traffic hours.

CAUTION
If a software update has a checkmark applied against it in the Reboot Req'd column of the Find Software Updates window, the BCM 5.0 will automatically reboot as soon as the update has been applied. You will not receive a reboot confirmation before the reboot occurs.

Procedure steps

Step	Action
1	In the task navigation panel, click the **Administration** tab.
2	Open the **Software Management** folder, and then click the **Software Updates** task. The Software Update panel opens. The Updates in Progress tab is open.
3	Click the **Scheduled Updates** tab. The Scheduled Software Updates panel opens.
4	Click the **Add** button. The Get New Updates window opens.
5	In the **Retrieve From** selection field, select the location where the software update is stored: • USB Storage Device • My Computer • Network Folder • FTP Server • HTTP Server
6	Select an update location and/or complete the appropriate access information.

Copyright © 2009 Nortel Networks

7 Click the **OK** button.

The New Updates Found window opens and displays a list of updates found in the specified location.

8 Select an update. The update must have a status of “Available”.

9 To view the details for an update, click the **Show Details** button.

The Details for Update window opens and displays any details about the update. Click the OK button to close the details window.

10 Click the **Schedule** button to create a schedule.

The Schedule Software Updates window opens.

11 Click the **Retrieve** field to select a date and time at which to retrieve the update.

A calendar window opens.

12 Select a retrieve date and time, and then close the window.

13 Click the **Apply** field to select a date and time at which to apply the update.

A calendar window opens.

14 Select a date and time, and then close the window.

15 Click the **OK** button.

The software update is added to the Scheduled Software Updates table. The status of the update is “Schedule”.

--End--

Copyright © 2009 Nortel Networks

Variable definitions

Columns	Description
Name	The name of the update.
Version	The version of the update.
Description	A brief description of the update.
Size	The size of the software update, in kilobytes.
Reboot Req'd	Displays whether the software update causes the BCM 5.0 to reboot when the update has been applied. If a reboot is required, the check box is checked.
Location	The storage location of the update. For example, FTP server.
Status	The status of the update.
	Scheduled—The software update has been scheduled.
	Removed—The scheduled software update has been deleted.
	Modified—The scheduled software update has been modified.
	Applied—The scheduled software update has been applied to the BCM 5.0.
Retrieve	The date and time at which the update will be retrieved.
Apply	The date and time at which the update will be applied.

Modifying a scheduled software update

Use this procedure to modify a scheduled software update.

CAUTION
Applying a software update to the BCM 5.0 is a service-affecting operation. Nortel recommends that you schedule updates for low-traffic hours.

CAUTION
If a software update has a checkmark applied against it in the Reboot Req'd column of the Find Software Updates window, the BCM 5.0 will automatically reboot as soon as the update has been applied. You will not receive a reboot confirmation before the reboot occurs.

Copyright © 2009 Nortel Networks

Procedure steps

Step	Action
1	In the task panel, click the **Administration** tab.
2	Open the **Software Management** folder, and then click the **Software Update** task. The Software Update panel opens. The Updates in Progress tab is open.
3	Click the **Scheduled Updates** tab.
4	In the **Scheduled Software Updates** table, select a scheduled update.
5	Click the **Modify** button. The Modify Scheduled Software Update window opens.
6	Click the **Retrieve** field to select a date and time at which to retrieve the update. A calendar window opens.
7	Select a retrieve date and time, and then close the window.
8	Click the **Apply** field to select a date and time at which to apply the update. A calendar window opens.
9	Select an apply date and time, and then close the window.
10	Click the **OK** button. The modified software update is displayed in the Scheduled Software Updates table. The modification may take a few minutes to appear in the table.

--End--

Deleting a scheduled software update

Use this procedure to delete a scheduled software update.

Procedure steps

Step	Action
1	In the task panel, click the **Administration** tab.
2	Open the **Software Management** folder, and then click the **Software Update** task. The Software Update panel opens. The Updates in Progress tab is open.
3	Click the **Scheduled Updates** tab.

Copyright © 2009 Nortel Networks

4 In the **Scheduled Software Updates** table, select a scheduled update.

5 Click the **Delete** button.

The Confirm Delete window opens.

6 Click the **Yes** button to delete the update.

The scheduled update is removed from the Scheduled Software Update table.

--End--

Viewing the software inventory

Use this procedure to view the software Inventory.

BCM 5.0 software is organized into software components that you can individually update as required. The version of each software component is tracked so that you can determine the exact software release level of a BCM 5.0 to the component level. The software inventory is a complete list of software components, their version, and the functional group to which they belong.

Procedure steps

Step	Action
1	In the task panel, click the **Administration** tab.
2	Open the **Software Management** folder, and then click the **Software Inventory** task. The **Software Inventory** panel opens.
3	View the details in the **Software Component Version Information** table. You can change the order of the information displayed in the table by clicking a column heading and dragging it to a new place in the table. You can also sort the information in a column by descending or ascending order, by clicking the column heading.

--End--

Removing a software update

Use this procedure to remove a software update that has been applied to the BCM 5.0. Not all software updates can be removed; whether a software update can be removed depends on the particular software update. Removing

Copyright © 2009 Nortel Networks

a software update does not remove the software itself from the BCM 5.0; it only returns the software components of the software update to a previous software version.

You must have administrator privileges to remove a software update from the BCM 5.0. Removing a software patch or update from the BCM 5.0 is a service-affecting operation. All services running on the system will be stopped. Consequently, Nortel recommends that you schedule removal of updates for low-traffic periods. If a software update is applied to a BCM 5.0 and then removed, this information is displayed in the Software Update History table. A removal operation is logged by the BCM 5.0, but does not generate an alarm condition. You can remove a software update if the update has a checkmark in the Removable column of the Software Update History table.

CAUTION
Applying a software update to the BCM 5.0 is a service-affecting operation. Nortel recommends that you schedule updates for low-traffic hours.

Procedure steps

Step	Action
1	In the task panel, click the **Administration** tab.
2	Open the **Software Management** folder, and then click the **Software Update History** task. The **Software Update History** panel opens.
3	Select an update in the **Software Update History** table. The update must have a checkmark against it in the **Removable** column.
4	Click the **Remove Software Update** button. A confirmation window opens.
5	Click **Yes**. The **Category** column in the **Software Update History** table displays “Patch Removed” for the removed software update.

--End--

Copyright © 2009 Nortel Networks

Copyright © 2009 Nortel Networks

Auto-Administration management

The information in this chapter applies to both the BCM50 and the BCM450 platforms running BCM 5.0.

This section describes how to use Auto-Administration Management feature for BCM 5.0 system.

BCM 5.0 Auto-Administration Management navigation

- Enabling Auto-Administration Management feature (page 228)
- Creating the package (page 229)
- Distributing the package (page 230)
- Creating authentication certificates (page 230)
- Distributing the certificate (page 231)
- Fetching the patch from FTP server (page 231)
- Distributing the fetch patch (page 232)

Enabling Auto-Administration Management feature

Use the following procedure to launch Auto-Administration Management from within Business Element Manger.

Prerequisites

- Launch Business Element Manager and connect to the BCM 5.0 system.

Procedure steps

Step	Action
1	Click the **Administration** tab.
2	From the **Auto-Administration Manager** folder, click **Auto-Administration Management**. Auto-Administration Management panel appears.
3	Select **Enable Autonomous Mode**.

Copyright © 2009 Nortel Networks

--End--

Creating the package

Use the following procedure to create an Auto-Administration Management package.

Procedure steps

Step	Action
1	Download required software updates or keycodes and put them in the desired network directory.
2	On the Tools menu, select Auto-Administration Manager. The Auto-Administration Management panel appears.
3	Click the **Add** button. The Auto-Administration Manager panel appears.
4	Click the **Package** tab.
5	In the **Package type** field, select the type of package type that you want from the list.
6	In the **Schedule** field, select the time when the package will be processed.
7	In the **Frequency** field, select the frequency. The frequencies available are Once, Daily, Weekly, Monthly.
8	In the **Certificate** field, select the token used to sign the package.
9	Click the **Browse** button of the **Source Dir** field. The Select window appears.
10	Navigate to the directory where the files are stored.
11	Select the source file.
12	Click **OK**.
13	Click the **Browse** button of the **Destination Dir** field. The Select window appears.
14	Navigate to the directory where you want the output zip file.
15	Click the **Generate** button. A request control file is created in Destination Dir, which describes the task and embeds the signature.

--End--

Copyright © 2009 Nortel Networks

Distributing the package

Use the following procedure to distribute the package using network.

Procedure steps

Step	Action
1	On the **Tools** menu, select **Auto-Administration Manager**. The Auto-Administration Management panel appears.
2	Click the **Add** button. The Auto-Administration Manager panel appears.
3	Click the **Package** tab.
4	In the **BCM address** field, select the BCM to which the package needs to be sent.
5	Click the **Browse** button. The Send panel appears.
6	Select the control file from the directory location.
7	Click the **Send** button. The package specified by package name path is transferred to the BCM specified the BCM address field.

--End--

Creating authentication certificates

Use the following procedure to create authentication certificates using Auto-Administration Management tool. This procedure is only necessary if you want to create customized certificates, rather than use default certificate.

Procedure steps

Step	Action
1	On the **Tools** menu, select **Auto-Administration Manager**. The Auto-Administration Management panel appears.
2	Click the **Add** button. The Auto-Administration Manager panel appears.
3	Click the **Certificate** tab.
4	In the Name field, enter the file name of validation certificate and package creation tokens.

Copyright © 2009 Nortel Networks

5 Click the **Browse** button.

The Save panel appears.

6 Navigate to the directory where you want to save the new certificate.

7 Click the **Generate** button.

The Auto-Administration Management tool creates new certificates with specified file name at the specified location. The authentication certificate has an extension of .cert. The package creation token has an extension of .priv.

--End--

Distributing the certificate

Use the following procedure to distribute the certificate using Auto-Administration Management tool.

Procedure steps

Step	Action
1	On the **Tools** menu, select **Auto-Administration Manager**. The Auto-Administration Management panel appears.
2	Click the **Add** button. The Auto-Administration Manager panel appears.
3	Click the **Certificate** tab.
4	In the BCM address field, specify the BCM address where you want the certificate.
5	Click the **Send** button. The authentication certificate is sent to the BCM specified in the address field.

--End--

Fetching the patch from FTP server

Use the following procedure to fetch the patch from FTP server using the Auto-Administration Management tool.

Prerequisites

- Setup FTP server and give read access to the directory for a user name with a configured password.

Copyright © 2009 Nortel Networks

- Generate authentication tokens using Auto-Administration Management tool.
- Install validation token and enable autonomous mode on the systems you like to manage using Auto-Administration Management tool.
- Copy "**aprequest.xml**" file into the directory on the FTP server.

Procedure steps

Step	Action
1	On the **Tools** menu, select **Auto-Administration Manager**. The Auto-Administration Management panel appears.
2	Click the **Add** button. The Auto-Administration Manager panel appears.
3	Click the **Package** tab.
4	In the **Package type** field, select package type as Fetch Patch.
5	In the **Schedule** field, select the time when the package will be processed.
6	In the **Frequency** field, select the frequency. The frequencies available are Once, Daily, Weekly, Monthly.
7	In the **Certificate** field, select the token used to sign the package.
8	In the **Fetch Method** field, select the fetch method as FTP.
9	In the **Remote Server IP/Name** field, select the already configured server or IP name.
10	In the **Remote User** field, select the already configured remote user name.
11	In the **Remote Password** field, select the already configured password.
12	In the **Remote Dir** field, select the directory where the patch is stored.
13	Click the **Browse** button of **Destination Dir** field. The **Select** window appears.
14	Navigate the directory where you want the control file to be stored.
15	Click the **Generate** button. A request control file is created in Destination Dir, which describes the task and embeds the signature.

--End--

Distributing the fetch patch

Use the following procedure to distribute the fetch patch using the Auto-Administration Management tool.

Copyright © 2009 Nortel Networks

Procedure steps

Step	Action
1	On the **Tools** menu, select **Auto-Administration Manager**. The Auto-Administration Management panel appears.
2	Click the **Add** button. The Auto-Administration Manager panel appears.
3	Click the **Package** tab.
4	Click the **Browse** button. The Distribute panel appears.
5	Select the control file from the directory location.
6	In the **BCM address** field, select the BCM to which the package needs to be sent.
7	Click the **Send** button. The patch specified by patch name path is transferred to the BCM specified the BCM address field.

--End--

Copyright © 2009 Nortel Networks

BCM 5.0 utilities

The information in this chapter applies to both the BCM50 and the BCM450 platforms running BCM 5.0.

This section contains information about how to use BCM 5.0 utilities within Element Manager to assist in performing administrative tasks for your BCM 5.0 system.

BCM 5.0 utilities navigation

- Pinging a device (page 234)
- Tracing a route (page 235)
- Viewing Ethernet activity (page 235)
- Resetting and rebooting (page 236)
- Setting release reasons (page 241)
- Command Line Interface (page 242)

Pinging a device

Use this procedure to ping a device. You can ping a device to verify that a route exists between the BCM 5.0 and another device.

Procedure steps

Step	Action
1	Click the **Administration** tab.
2	From the **Utilities** folder click **Ping**. The Ping panel opens.
3	In the **Address** box, enter the IP address of the element you want to ping.
4	Click **Ping**. The results appear in the Results area.

Copyright © 2009 Nortel Networks

--End--

Tracing a route

Use this procedure to start a trace to measure round-trip times to all hops along a route. This helps you to identify bottlenecks in the network.

Procedure steps

Step	Action
1	Click the **Administration** tab.
2	From the **Utilities** folder, click **Trace Route**. The Trace Route panel opens.
3	In the **Maximum number of hops** box, enter the maximum number of hops on the route.
4	In the **Address** box, enter the IP address of the element for which you want to perform a trace route.
5	Click **Trace Route**. The results are displayed in the Results area.

--End--

Viewing Ethernet activity

Use this procedure to view Ethernet activity in the BCM 5.0 system.

Procedure steps

Step	Action
1	Click the **Administration** tab.
2	From the **Utilities** folder, click **Ethernet Activity**. The Ethernet Activity panel opens.
3	In the **Ethernet Activity** area, click **Retrieve**. Details are displayed in the Results area.

--End--

Copyright © 2009 Nortel Networks

Resetting and rebooting

Use the Reset utility to perform a warm-reset, cold-reset, or reboot of your BCM 5.0 system. You can also perform a Configuration Reset which will restore configuration settings to the factory default, or a Software Reset which will reset the software and configuration to the factory default. For information on Configuration and Software Resets, see Maintenance CLI (page 243).

Warm reset

Use this procedure to restart all telephony services, including LAN CTE, voice mail, and IP telephony. This operation does not affect configuration parameters or programming.

CAUTION
All active calls on the BCM 5.0 system will be dropped.

Procedure steps

Step	Action
1	Click the **Administration** tab.
2	From the **Utilities** folder, click **Reset**. The Reset panel opens.
3	Click **Warm Reset Telephony Services**. A confirmation dialog box appears.
4	Click **OK**. All telephony services are restarted, including LAN CTE, voice mail, and IP telephony.

--End--

Copyright © 2009 Nortel Networks

Cold reset

Use this procedure to perform a cold reset. A cold reset of the BCM 5.0 resets telephony programming of the BCM 5.0 system to the factory defaults for that software level.

CAUTION

Performing a cold reset of telephony services erases all telephony programming, as well as all Voice Message mailboxes and messages. Telephony services will restart with all telephony programming at default values for the specified region, template, and start DN, for the current software release level.

Copyright © 2009 Nortel Networks

Procedure steps

Step	Action
1	Click the **Administration** tab.
2	From the **Utilities** folder, click **Reset**. The Reset panel opens.
3	Click **Cold Reset Telephony Services**. The Cold Reset Telephony dialog box appears.
4	Configure the Cold Reset Telephony attributes.
5	Click **OK**. All telephony services are reset, including LAN CTE, voice mail, and IP telephony.

--End--

Variable definitions

Variable	Value
Region	Specify the startup region.
Template	Specify the startup template. Options are: PBX or DID.
Start DN	Specify the startup DN. The default value is 221.

Rebooting

Use this procedure to reboot the system. Rebooting the BCM 5.0 system temporarily stops all services running on the system and then restarts all services.

Procedure steps

Step	Action
1	Click the **Administration** tab.
2	From the **Utilities** folder, click **Reboot**. The Reboot panel opens.
3	Click **Reboot**. A confirmation dialog box appears.

Copyright © 2009 Nortel Networks

4	Click **OK**. The operating system of the BCM 5.0 restarts.

--End--

Creating a scheduled reboot

Use this procedure to create a scheduled reboot. This allows you to specify a one-time or recurring reboot schedule.

Procedure steps

Step	Action
1	Click the **Administration** tab.
2	From the **Utilities** folder, click **Reboot**. The Reboot panel opens.
3	Select the **Scheduled Reboot** tab. The Scheduled Reboot screen appears.
4	Click **Add**. The Add Scheduled Reboot Screen appears.
5	Enter a memo for the schedule in the Memo field.
6	Select Once, Daily, Weekly, or Monthly from the Recurrence field.
7	Select the month you want the reboot to occur.
8	Enter the day of the month you want the reboot to occur.
9	Enter the time you want the reboot to occur.
10	Click **Ok**.

--End--

Copyright © 2009 Nortel Networks

Variable definitions

Variable	Value
Memo	Allows you to add a title or a note to the scheduled reboot. This is displayed in the **Memo** field of the Scheduled Reboot table.
Recurrence	Specify how often you want the reboot to occur. Options are: Once, Daily, Weekly, or Monthly.
Month	Specify the month you want the reboot to occur.
Day of month	Specify the day of month you want the reboot to occur.
Time	Specify the time you want the reboot to occur.

Modifying scheduled reboot

Use this procedure to modify an existing scheduled reboot.

Procedure steps

Step	Action
1	Click the **Administration** tab.
2	From the **Utilities** folder, click **Reboot**.
	The Reboot panel opens.
3	Select the **Scheduled Reboot** tab.
	The Scheduled Reboot screen appears.
4	Select the Scheduled Reboot you want to modify.
5	Click **Modify**.
	The Modify Scheduled Reboot Screen appears.
6	Enter a memo for the schedule in the Memo field.
7	Select Once, Daily, Weekly, or Monthly from the Recurrence field.
8	Select the month you want the reboot to occur.
9	Enter the day of the month you want the reboot to occur.
10	Enter the time you want the reboot to occur.
11	Click **Ok**.

--End--

Copyright © 2009 Nortel Networks

Variable definitions

Variable	Value
Memo	Allows you to add a title or a note to the scheduled reboot. This is displayed in the **Memo** field of the Scheduled Reboot table.
Recurrence	Specify how often you want the reboot to occur. Options are: Once, Daily, Weekly, or Monthly.
Month	Specify the month you want the reboot to occur.
Day of month	Specify the day of month you want the reboot to occur.
Time	Specify the time you want the reboot to occur.

Deleting a scheduled reboot

Use this procedure to delete an existing scheduled reboot.

Procedure steps

Step	Action
1	Click the **Administration** tab.
2	From the **Utilities** folder, click **Reboot**. The Reboot panel opens.
3	Select the **Scheduled Reboot** tab. The Scheduled Reboot screen appears.
4	Select the Scheduled Reboot you want to delete.
5	Click **Delete**. A confirmation window appears.
6	Click **Yes** to delete the scheduled reboot.

--End--

Setting release reasons

Use this procedure to determine the level of system reporting you require for released ISDN or VoIP calls.

Procedure steps

Step	Action
1	Click the **Administration** tab.

Copyright © 2009 Nortel Networks

2 From the **Utilities** folder, click **Diagnostic settings**.

The Diagnostic settings panel opens.

3 From the **Release Reasons** list select the level of reporting that you require.

--End--

Variable definitions

Variable	Value
None	No text will accompany a dropped call notification.
Simple	A simple explanation of the Cause code is provided. Select the Cause Code check box to provide only the cause code with a dropped call notification. Clear the Cause Code check box to provide text and the cause code with a dropped call notification.
Detailed	A detailed explanation of the Cause code is provided.

Command Line Interface

You can use the Command Line Interface (CLI) to configure basic settings, as well as shut down, reboot, or perform a Configuration or Software Reset on your BCM450 or BCM50 system. Two CLI modes are available: Maintenance CLI, and Configuration CLI.

Your user account must be assigned the System-CLI privilege in order to access the CLI.

This section contains information about the following topics:

- Configuration CLI (page 242)
- Maintenance CLI (page 243)

Configuration CLI

The Configuration CLI displays when the system is in Main OS mode. The options available on the Configuration CLI are:

- 0—Exit. The system exits the CLI to the login prompt.
- 1—Reboot. The system reboots to the Main OS.
- 2—Shutdown. The system shuts down. You need physical access to the BCM hardware to restart the system.
- 3—Safe OS. The system reboots to the Safe OS and waits 1 minute for you to login. When you login within 1 minute, the Maintenance CLI

Copyright © 2009 Nortel Networks

displays. If you do not login within 1 minute, the system changes to the Main OS.

- 4—Configuration Reset. A Level 1 reset occurs. The system resets all configuration data to the factory defaults.
- 5—Software Reset. A Level 2 reset occurs. The system resets all configuration data and software to the factory defaults.
- 6—IP Configuration. You can configure the following basic IP settings:
  - 0—Return to Previous Menu. The system returns to the main menu.
  - 1—Hostname. Provision the hostname of the system.
  - 2—IP Address. Provision the IP address of the system.
  - 3—Subnet Mask. Provision the subnet mask for the IP address.
  - 4—Default Gateway. Provision the default gateway for the system.
  - 5—DHCP Client Mode. Enable or disable the DHCP client.
  - 6—Commit Changes. Save changes to the IP settings.
  - 7—Reload Settings. Reload the existing IP settings.

Maintenance CLI

The Maintenance CLI displays when the system is in Safe OS mode. The Safe OS is a diagnostic mode that you can use if the Main OS is experiencing problems. No applications or telephony services are running when the BCM 5.0 is in Safe OS mode. The options available on the Maintenance CLI are:

- 0—Exit. The system exits to the Safe OS login prompt.
- 1—Reboot into Main OS. The system reboots to the Main OS.
- 2—Shutdown. The system shuts down. You need physical access to the BCM450 hardware to restart the system.
- 3—Reboot into Safe OS. The system reboots to the Safe OS and waits 1 minute for you to login. If you do not login within 1 minute, the system changes to the Main OS.
- 4—Transition to Main OS. The system changes from the Safe OS to the Main OS without restarting.
- 5—Configuration Reset. A Level 1 reset occurs. The system resets all configuration data to the factory defaults.
- 6—Software Reset. A Level 2 reset occurs. The system resets all configuration data and software to the factory defaults.

Copyright © 2009 Nortel Networks

BCM Monitor installation and removal

The information in this chapter applies to both the BCM50 and the BCM450 platforms running BCM 5.0.

BCM Monitor is included with the installation of Element Manager. You do not need to download and install the utility separately, unless you are an administrative user who requires access to only this management tool, and you do not have or require Element Manager.

BCM Monitor installation and removal navigation

- Installing BCM Monitor (outside Element Manager) (page 244)
- Removing BCM Monitor (outside Element Manager) (page 245)

Installing BCM Monitor (outside Element Manager)

You can download and install BCM Monitor separately from Element Manager if you are an administrative user who requires access to only this management tool, and you do not have or require Element Manager.

Prerequisites

- Connect to your BCM 5.0 system and access the BCM 5.0 Web page.
- For security reasons, the user on the computer on which the BCM Monitor runs must be authenticated by the BCM 5.0 system.

Procedure steps

Step	Action
1	In your web browser, type the IP address of the BCM 5.0 and click the **Go** button. The login screen displays.
2	Log in using the same username and password that you use to access the Element Manager. The BCM 5.0 Web Page opens.
3	Click the **Administrator Applications** link.

Copyright © 2009 Nortel Networks

The Administrator Applications page appears.

4 Click the **BCM Monitor** link.

The BCM Monitor page appears.

5 Click the **Download BCM Monitor** link.

6 Click **Save** or click **Run** to run the install file directly from the Web page.

7 If you clicked **Save**, the **Download complete** dialog box notifies you when the download has finished. Go to the folder where you saved the BCM Monitor install file, and then double-click the BCMMonitor.exe icon.

8 Follow the instructions on the installation wizard.

--End--

Removing BCM Monitor (outside Element Manager)

If you do not require BCM Monitor on your computer, you can remove it from your computer.

Procedure steps

Step	Action
1	In Windows, click **Start**.
2	Select **Settings** > **Control Panel**.
3	Double-click **Add or Remove Programs**.
4	Select **BCM Monitor**, and then click **Change/Remove**.
5	Follow the on-screen removal instructions.

--End--

Copyright © 2009 Nortel Networks

BCM Monitor connection

The information in this chapter applies to both the BCM50 and the BCM450 platforms running BCM 5.0.

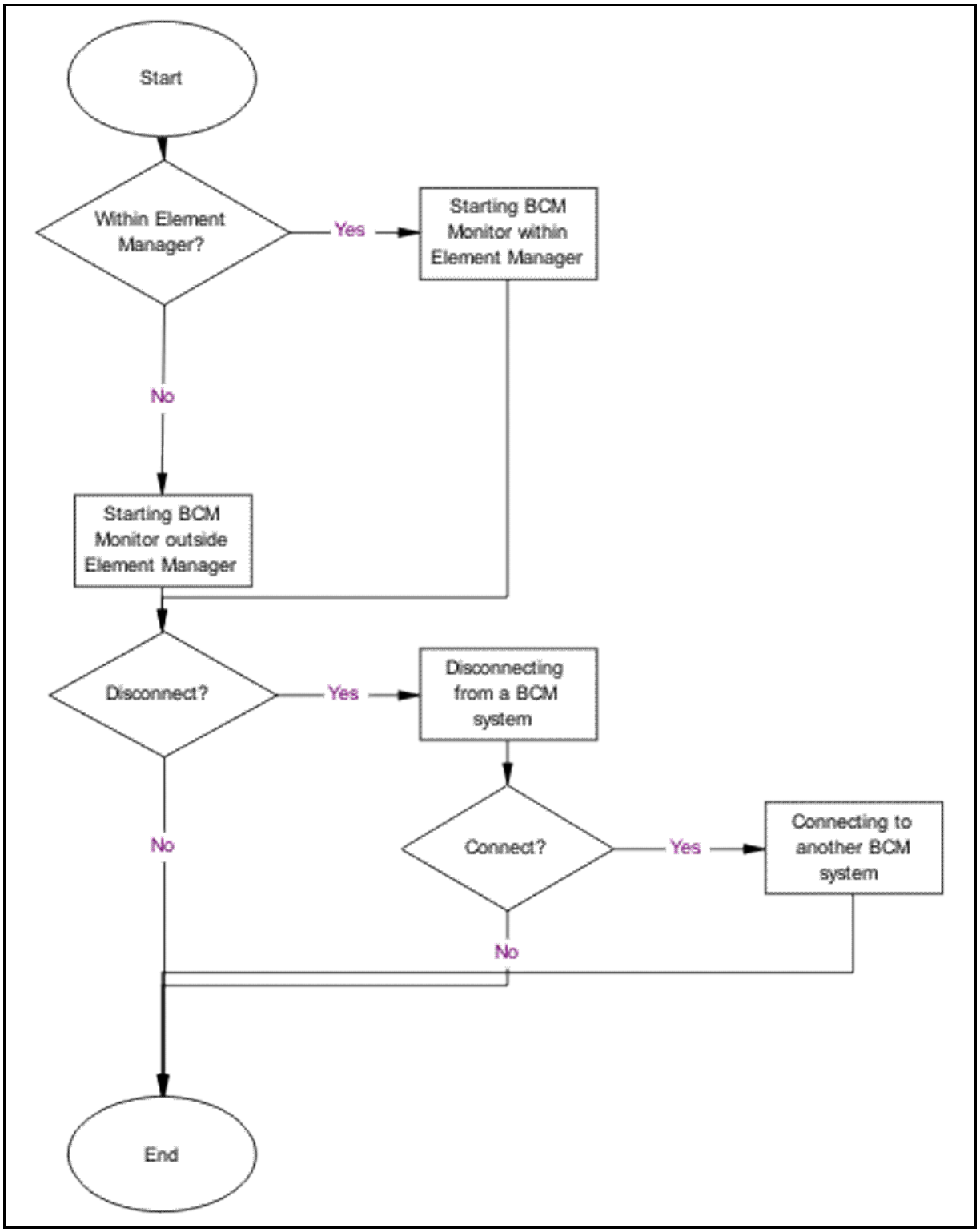
You can start BCM Monitor from within Element Manager or outside of Element Manager. You can also disconnect BCM Monitor from the current system and connect to another system.

BCM Monitor connection procedures

This task flow shows you the sequence of procedures you perform to start BCM Monitor. To link to any procedure, click on BCM Monitor connection navigation.

Copyright © 2009 Nortel Networks

Figure 1 BCM Monitor connection procedures



Copyright © 2009 Nortel Networks

BCM Monitor connection navigation

- Starting BCM Monitor within Element Manager (page 248)
- Starting BCM Monitor outside Element Manager (page 248)
- Disconnecting from a BCM system (page 249)
- Connecting to another BCM system (page 249)

Starting BCM Monitor within Element Manager

You can launch BCM Monitor from within Element Manager.

Prerequisites

- Launch Element Manager and connect to your BCM 5.0 system.

Procedure steps

Step	Action
1	Click the **Administration** tab.
2	From the **Utilities** folder, click **BCM Monitor**. The BCM Monitor pane appears.
3	Click **Launch BCM Monitor**. BCM Monitor appears and connects to the same BCM 5.0 that the Element Manger is currently connected to.

--End--

Starting BCM Monitor outside Element Manager

Start BCM Monitor without launching Element Manager or if you do not have Element Manager installed on your computer.

Procedure steps

Step	Action
1	Double-click the BCM Monitor shortcut on your desktop or select **BCM Monitor** in your **Start/Programs** menu. The **Enter Logon Information** window appears.
2	In the **System Name or IP Address** box, enter the system name of the BCM 5.0 you want to monitor.
3	In the **Connect As** box, enter your BCM 5.0 user name.

Copyright © 2009 Nortel Networks

4 In the **Password** box, enter the password associated with your BCM 5.0 user name.

5 Click **Connect**.

The BCM Monitor pane appears.

--End--

Disconnecting from a BCM system

Disconnect BCM Monitor from your BCM 5.0 system.

Prerequisites

- Start BCM Monitor. For more information, see Starting BCM Monitor within Element Manager (page 248) or Starting BCM Monitor outside Element Manager (page 248).

Procedure steps

Step	Action
1	On the **File** menu, choose **Disconnect from BCM**. BCM Monitor disconnects from the BCM 5.0 system and clears all the fields.
2	If you do not want to connect to another BCM 5.0 system, close the BCM Monitor application. This terminates the application and disconnects BCM Monitor from the BCM 5.0 system.

--End--

Connecting to another BCM system

Connect BCM Monitor to another BCM 5.0 system.

Prerequisites

- Disconnect BCM Monitor from your current BCM 5.0 system. For more information, see Disconnecting from a BCM system (page 249).

Procedure steps

Step	Action
1	On the **File** menu, choose **Connect to BCM**. The **Enter Logon Information** window appears.

Copyright © 2009 Nortel Networks

2 In the **System Name or IP Address** box, enter the system name of the BCM 5.0 you want to monitor.

3 In the **Connect As** box, enter your BCM 5.0 user name.

4 In the **Password** box, enter your password.

5 Click **Connect**.

The BCM Monitor pane appears.

--End--

Copyright © 2009 Nortel Networks

Copyright © 2009 Nortel Networks

Using BCM Monitor

The information in this chapter applies to both the BCM50 and the BCM450 platforms running BCM 5.0.

This section describes how to use BCM Monitor to capture and review data about the BCM 5.0 system.

Using the BCM Monitor navigation

- System status snapshots (page 252)
- UIP information analysis (page 257)
- Line summary (page 262)
- BCM Monitor statistics (page 262)

System status snapshots

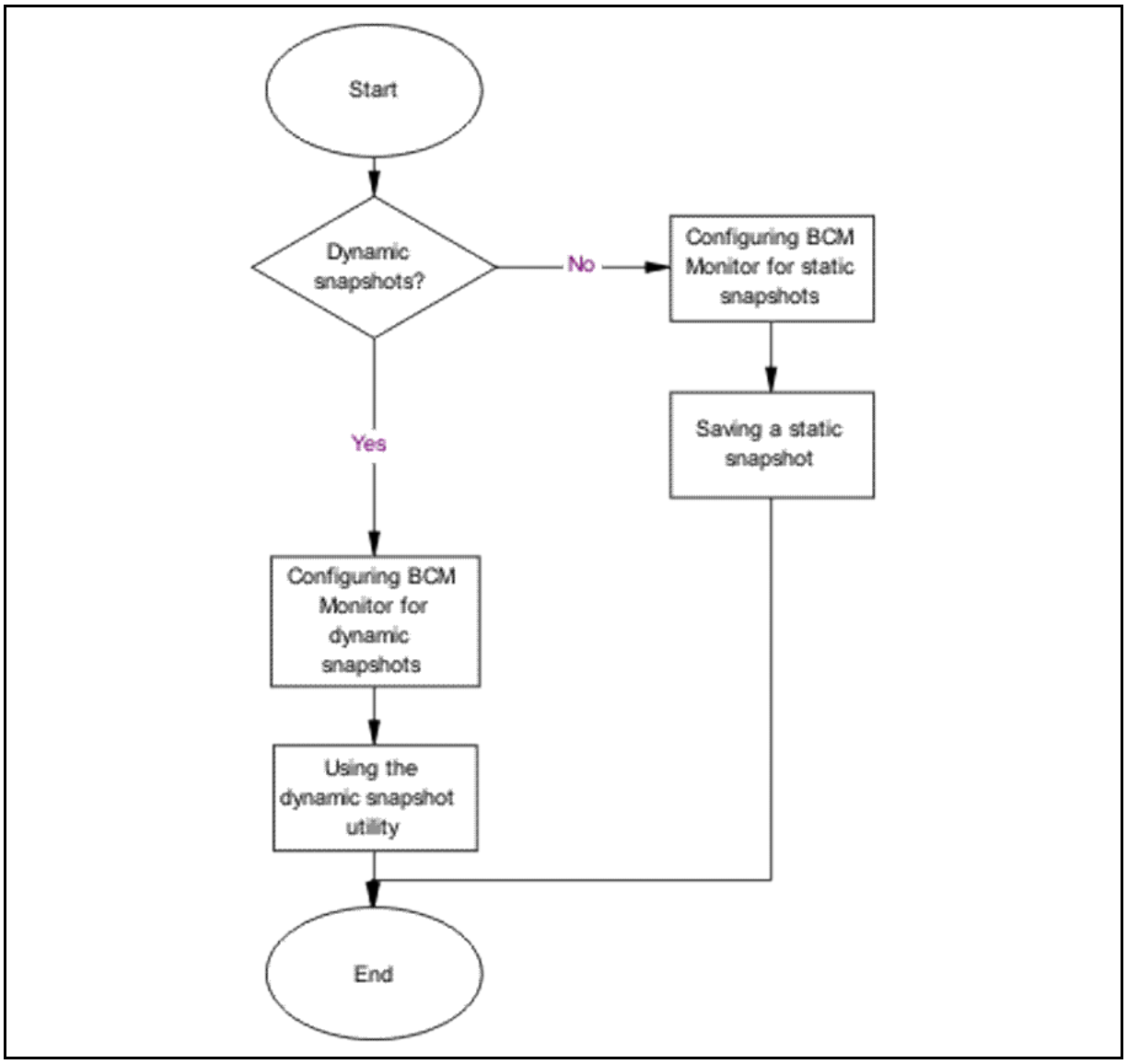
You can capture static and dynamic snapshots of system information in a text file. For static snapshots, you specify which BCM Monitor tab you want to capture. Dynamic snapshots record snapshots of system data that changes over time, such as CPU utilization and active calls. The system captures dynamic snapshots according to a frequency that you define.

System status snapshot procedures

This task flow shows you the sequence of procedures you perform to work with system status snapshots. To link to any procedure, click on BCM 5.0 system status snapshots navigation

Copyright © 2009 Nortel Networks

Figure 2 BCM 5.0 system status snapshots procedures



BCM 5.0 system status snapshots navigation

- Configuring BCM Monitor for static snapshots (page 253)
- Saving a static snapshot (page 255)
- Configuring BCM Monitor for dynamic snapshots (page 255)
- Using the dynamic snapshot utility (page 257)

Configuring BCM Monitor for static snapshots

Configure BCM Monitor with the desired settings for static snapshots.

Copyright © 2009 Nortel Networks

Procedure steps

Step	Action
1	On the **File** menu, choose **Snapshot Settings**. The Snapshot Settings pane appears.
2	Click the **Static snapshot settings** tab.
3	In the **Output Filename** box, enter the filename for the static snapshot. For additional options, click the arrow button to the right of the Output Filename box.
4	In the **Output Folder** box, enter the path of the folder where you want to store static snapshots. To browse for a folder, click ... to the right of the Output Folder box. The Browse for Folder dialog box appears.
5	Select a folder or make a new folder, and then click **OK**.
6	Select the BCM Monitor tabs that you want to include in static snapshots in the Tabs Saved in Snapshot box. For example, if you want snapshots to include information about voice ports, make sure that Voice Ports is included in the Tabs Saved in Snapshot box.
7	To remove tabs from the snapshots definition, select a tab from the Tabs Saved in Snapshot box and use the arrow button to move the tab to the Tabs Not Saved in Snapshot box.
8	Click **OK**.

--End--

Copyright © 2009 Nortel Networks

Variable definitions

Variable	Value
Auto-Increment Counter	Automatically increments the filename so that subsequent files do not overwrite earlier files. Adds <counter> to the filename in the Output Filename box.
BCM Name	Adds the name of the BCM to the filename. Position your cursor in the filename box where you want the name to be added. Adds <BCM name> to the filename in the Output Filename box.
Time	Adds the time to the filename. Position your cursor in the filename box where you want the name to be added. Adds <time> to the filename in the Output Filename box.
Date	Adds the date to the filename. Position your cursor in the filename box where you want the name to be added. Adds <date> to the filename in the Output Filename box.

Saving a static snapshot

After you have configured static snapshot settings, you can save a static snapshot at any time.

Prerequisites

- Configure BCM Monitor for static snapshots. For more information, see Configuring BCM Monitor for static snapshots (page 253).

Procedure steps

Step	Action
1	While you are observing data on a tab, on the **File** menu, choose **Save Static Snapshots** or press Ctrl+s. All the tabs included in the snapshot definition are saved to a text file in the folder you specified when you configured the static snapshot settings.

--End--

Configuring BCM Monitor for dynamic snapshots

Dynamic snapshots record snapshots of system data that changes over time, such as CPU utilization and active calls.

Copyright © 2009 Nortel Networks

Procedure steps

Step	Action
1	On the **File** menu, select **Snapshot Settings**. The Snapshot Settings panel opens.
2	Click the **Dynamic Snapshot Settings** tab.
3	In the **Output Filename** box, enter the filename for the dynamic snapshot. For additional options, click the arrow button to the right of the Output Filename box.
4	Configure the Output Filename attributes.
5	In Output Folder box, enter the path of the folder where you want to store the static snapshots. To browse for a folder, click the ... button to the right of the Output Folder box. The Browse for Folder dialog box appears.
6	Select a folder or make a new folder, and then click **OK**.
7	Select the BCM Monitor tabs that you want to include in dynamic snapshots in the Tabs Saved in Snapshot box. For example, if you want the snapshots to include information about voice ports, make sure that Voice Ports is included in the Tabs Saved in Snapshot box.
8	To remove a tab from the snapshots, select a tab from the Tabs Saved in Snapshot box and use the arrow button to move the tab to the Tabs Not Saved in Snapshot box.
9	In the Automatic Snapshot area, click the **Enable Automatic Snapshot** check box to enable automatic snapshots. If you disable automatic snapshots, BCM Monitor will take a single snapshot instead of a series of snapshots. If you enable automatic snapshots, the Automatic Snapshot Interval (sec) box and the Number of Snapshots box become available.
10	In the **Automatic Snapshot Interval (sec)** box, enter the interval in seconds between successive automatic snapshots.
11	In the **Number of Snapshots** box, enter the number of snapshots from 1 to Infinite.
12	Click **OK**.

--End--

Copyright © 2009 Nortel Networks

Variable definitions

Variable	Value
Auto-Increment Counter	Automatically increments the filename so that subsequent files do not overwrite earlier files. Adds <counter> to the filename in the Output Filename box.
BCM Name	Adds the name of the BCM to the filename. Position your cursor in the filename box where you want the name to be added. Adds <BCM name> to the filename in the Output Filename box.
Time	Adds the time to the filename. Position your cursor in the filename box where you want the name to be added. Adds <time> to the filename in the Output Filename box.
Date	Adds the date to the filename. Position your cursor in the filename box where you want the name to be added. Adds <date> to the filename in the Output Filename box.

Using the dynamic snapshot utility

After you have configured dynamic snapshot settings, you can start and stop the dynamic snapshot utility.

Prerequisites

- Configure BCM Monitor for dynamic snapshots. For more information, see Configuring BCM Monitor for dynamic snapshots (page 255).

Procedure steps

Step	Action
1	To start the dynamic snapshot utility, on the **File** menu, select **Dynamic Snapshot > Start**. BCM Monitor starts taking snapshots and saves the snapshot data in a file located in the folder you specified when you configured the dynamic snapshot settings.
2	To stop the dynamic snapshot utility, on the **File** menu, select **Dynamic Snapshot > Stop**.

--End--

UIP information analysis

The Universal ISDN Protocol (UIP) tab allows you to enable monitoring of UIP messages associated with IP trunks (MCDN messages) and PRI modules installed in the monitored BCM system.

Copyright © 2009 Nortel Networks

This section contains the following topics:

- Enabling UIP message monitoring (page 258)
- Disabling UIP message monitoring (page 259)
- Logging UIP data (page 260)
- Accessing UIP log files (page 260)
- Disabling UIP timeout settings (page 260)
- Accessing message detail information elements (page 261)
- Clearing message detail information elements (page 261)

Enabling UIP message monitoring

Enable monitoring of UIP messages associated with IP trunks (MCDN messages) and PRI modules installed in the monitored BCM 5.0 system.

Prerequisites

CAUTION

Monitoring UIP messages can affect the performance of the BCM 5.0 system or connected peripherals. For example, if IP sets or voice ports make or receive a high number of calls over PRI trunks, monitoring UIP increases the amount of signalling data and can increase the response time for IP sets or voice ports. Therefore, it is strongly recommended that you monitor only a single UIP module at a time and restrict the monitoring time.

Procedure steps

Step	Action
1	Click the **UIP** tab.
2	Select the **MCDN over IP** check box.
3	To select an expansion module, select one of the following from the **Bus** list: • Bus 3 • Bus 5 • Bus 7

Copyright © 2009 Nortel Networks

4	Select the type of ISDN modules: • PRI — enables monitoring of a DTI module • BRI — enables monitoring of BRI loops

--End--

Example of enabling UIP message monitoring

For example, you can monitor UIP messages for loops 1 and 2 of a BRI module connected to Bus 5 and a PRI module connected to Bus 6.

Step	Action
1	Select Bus 5 - BRI.
2	Select Module 1 - Loop 1.
3	Select Module 1 - Loop 2.
4	Select Bus 7 - PRI.

--End--

Disabling UIP message monitoring

Disable monitoring of UIP messages associated with IP trunks (MCDN messages) and PRI modules installed in the monitored BCM 5.0 system.

Procedure steps

Step	Action
1	Click the **UIP** tab.
2	Clear the **MCDN over IP** check box.
3	From the **Bus** list, select the bus you want to disable.
4	Select the **Off** option button.

--End--

Copyright © 2009 Nortel Networks

Logging UIP data

You can log UIP data to track the most recent 20 UIP messages.

Procedure steps

Step	Action
1	Click the **UIP** tab.
2	Select the **Log UIP Data** check box.

--End--

Accessing UIP log files

If you enable UIP logging, BCM Monitor writes UIP messages in log files, which are created in the log folder in the BCM Monitor startup directory. One log file is generated for each monitored system and each module or loop.

Procedure steps

Step	Action
1	Locate the log file that is saved to the BCM Monitor startup directory. Log files are named IPAddr_MCDN.log, IPAddr_PRI_BusX.log, and IPAddr_BRI_BusXModuleYLoopZ.log.
2	Open the log file with a text editor, such as Notepad, or a spreadsheet application, such as Microsoft Excel. You can view the amount of time after which monitoring of selected UIP modules will be disabled, and you can disable the monitoring timeout. If you are investigating intermittent problems, an extended monitoring period can be required. In this case, disable the monitoring timeout and enable logging of UIP data.

--End--

Disabling UIP timeout settings

Disabling UIP timeout settings allows you to override the UIP monitoring timeout.

Prerequisites

- Before you disable the monitoring timeout, consider the potential impact on system performance if the BCM 5.0 system handles a high number of PRI calls.

Copyright © 2009 Nortel Networks

Procedure steps

Step	Action
1	Click the **UIP** tab.
2	Select the **Disable Timeout** check box.

--End--

Accessing message detail information elements

You can view message details to get more information about a UIP message.

Procedure steps

Step	Action
1	Click the **UIP** tab. The Universal ISDN Protocol Messages area displays detailed information about monitored UIP modules.
2	In the Universal ISDN Protocol Messages area, double-click a UIP message. Information elements appear below the UIP message.

--End--

Clearing message detail information elements

Clear message details after you have viewed the message detail information.

Procedure steps

Step	Action
1	Click the **UIP** tab. The Universal ISDN Protocol Messages area displays detailed information about monitored UIP modules.
2	In the Universal ISDN Protocol Messages area, right-click a UIP message or information element and then click **Clear Tree**. The entire tree is cleared from the Universal ISDN Protocol Messages area.

--End--

Copyright © 2009 Nortel Networks

Line summary

The Line Monitor tab provides real time information about the state of all physical and voice over IP (VoIP) lines on the BCM system.

Procedure steps

Step	Action
1	Click the **Line Monitor** tab.
2	Select the **Show All Lines (Including Inactive)** check box. The Line Monitor area displays all lines on the BCM 5.0 system. For lines displayed in light gray, previous calls are shown until a new call is placed or received on that line.

--End--

BCM Monitor statistics

This section contains information on the following topics:

- Viewing current, minimum, and maximum values (page 262)
- Resetting logged minimum and maximum values (page 263)

Viewing current, minimum, and maximum values

Use BCM Monitor to view the current, minimum, and maximum values of a parameter.

Procedure steps

Step	Action
1	On one of the BCM Monitor panes, click the statistical value for which you want to view the current, minimum, and maximum values. The current (Cur:), minimum (Min:), and maximum (Max:) values appear on the Status bar at the bottom of the panel. The values remain on the Status bar, until another statistical value to view is selected.
2	To view the date and time for the statistical values, on the **Statistics** menu, select **Show Min/Max Times**. A dialog box appears with the date and time when the minimum and maximum values occurred.

Copyright © 2009 Nortel Networks

3	Click **OK** to close the dialog box.

--End--

Resetting logged minimum and maximum values

Reset the minimum and maximum values, to delete the current minimum and maximum values and start recording new values.

Procedure steps

Step	Action
1	Click the statistical value you want to reset.
2	To reset only the selected statistical value, on the **Statistics** menu, select **Reset Current Min/Max**.
3	To reset the statistical values for all statistics, on the **Statistics** menu, select **Reset All Min/Max**.

--End--

Copyright © 2009 Nortel Networks

Application Launcher

This section describes the Application Launcher supported on the BCM450 and BCM50 platforms running BCM 5.0.

Navigation

- Accessing the Application Launcher through a web browser (page 264)
- Accessing the Application Launcher through a shortcut link on your desktop (page 265)
- Uploading a custom configuration file (page 266)
- Importing custom branding (page 267)

Accessing the Application Launcher through a web browser

You can connect to the Application Launcher for your BCM system through a web browser.

Prerequisites

- Download and install Element Manager. For more information, the *Nortel Business Communications Manager 5.0 Configuration - System (NN40170-501)*.
- Access the BCM Web page. For more information, see the *Nortel Business Communications Manager 5.0 Configuration - System (NN40170-501)*.

Procedure steps

Step	Action
1	In your Web browser, type the IP address of the BCM 5.0.
2	Click **Go**, or press **Enter**. Security Alert dialog displays.
3	Click Yes.

Copyright © 2009 Nortel Networks

4 Log in using the same username and password that you use to access the Element Manager.
The BCM 5.0 Web page opens.

5 The Welcome to BCM Web page displays and the Application Launcher starts.

A configuration file is created that contains your company information.

The following tabs are displayed on the page:

- Main Applications
- Advanced
- Help

Attention: The current software version and your user credentials for the Application Launcher automatically downloads. You may be prompted to enter the software version.

6 Click the **Main Applications** tab.
A list of your available applications appears in the Select Applications section.

7 Select an application from the list.

8 Click **Run**.
The application launches.

--End--

Accessing the Application Launcher through a shortcut link on your desktop

You can connect to the Application Launcher for your BCM system through a shortcut link on your desktop.

Procedure steps

Step	Action
1	On your desktop, click on the Application Launcher shortcut. The login screen displays.
2	Log in using the same username and password that you use to access the Element Manager. The BCM 5.0 Web Page opens.

Copyright © 2009 Nortel Networks

3 The Welcome to BCM Web page displays and the Application Launcher starts.

A configuration file is created that contains your company information.

The following tabs are displayed on the page:

- Main Applications
- Advanced
- Help

Attention: The current software version and your user credentials for the Application Launcher automatically downloads. You may be prompted to enter the software version.

4 Click the **Main Applications** tab.
A list of your available applications appears in the Select Applications section.

5 Select an application from the list.

6 Click **Run**.
The application launches.

--End--

Uploading a custom configuration file

You can upload a modified xml file to add or hide applications or URLs to the Application Launcher. For more information about parameters that you can change in the custom configuration file, see BCM 5.0 web page (page 15).

Procedure steps

Step	Action
1	From the Welcome to BCM Web page, click on the **Advanced** tab.
2	Click **Upload Custom Configuration**. A Windows Explorer window appears.
3	Navigate to the modified xml file you want to upload
4	Click Open. The Application Launcher installs the custom configuration file that you selected.

Copyright © 2009 Nortel Networks

--End--

Importing custom branding

You can upload a custom brand, such as a company logo, to the Application Launcher web page to replace the default Nortel logo. You can modify the html template available at http://bcmipaddress/oam/em.web/template_north_panel.htm. The dimensions of the web page are 130x740.

Procedure steps

Step	Action
1	Log on to the Application Launcher through the BCM web page. The BCM 5.0 Web Page opens.
2	Click the **Advanced** tab.
3	Click **Upload Branding Web Page.** A Windows Explorer window appears.
4	Navigate to the html file you have modified.
5	Click **Open**. The new html file replaces the default Nortel branding.

--End--

Copyright © 2009 Nortel Networks

BCM 5.0 service management system

The information in this chapter applies to both the BCM50 and the BCM450 platforms running BCM 5.0.

This section describes how to view and administer the services that run on the BCM 5.0 system.

Managing services

This section contains information on the following topics:

- Viewing details about services (page 268)
- Stopping a service (page 269)
- Restarting a service (page 269)

Attention: Use the BCM 5.0 Services Manager only as directed by Nortel Technical Support. Improper use of the BCM 5.0 Services Manager may adversely affect system operation.

Viewing details about services

Use the following procedure to view details about the services running on the BCM 5.0 system.

Procedure steps

Step	Action
1	Click the **Administration** tab.
2	Open the **General** folder, and then click the **Service Manager** task. The Service Manager page opens. Services are displayed in the Services table.

--End--

Copyright © 2009 Nortel Networks

Stopping a service

Use the following procedure to stop any of the services that are running on the BCM 5.0 system.

Procedure steps

Step	Action
1	Click the **Administration** tab.
2	Open the **General** folder, and then click the **Service Manager** task. The Service Manager page opens. Services are displayed in the Services table.
3	In the **Services** table, select a service.
4	Click the **Stop** button.
5	A confirmation dialog box opens.
6	Click **Yes.** In the Services table, Stopped is displayed in the Status column for the stopped service

--End--

Restarting a service

Use the following procedure to restart any of the services that are running on the BCM 5.0 system.

Procedure steps

Step	Action
1	Click the **Administration** tab.
2	Open the **General** folder, and then click the **Service Manager** task. The Service Manager page opens. Services are displayed in the Services table.
3	In the **Services** table, select a stopped service.
4	Click the **Restart** button. A confirmation dialog box opens.
5	Click **Yes**.
6	In the **Services** table, Running is displayed in the **Status** column for the restarted service.

Copyright © 2009 Nortel Networks

--End--

Copyright © 2009 Nortel Networks

Copyright © 2009 Nortel Networks

BCM 5.0 Management Information Bases

The information in this chapter applies to both the BCM50 and the BCM450 platforms running BCM 5.0.

This section describes the Management Information Bases (MIBs) supported by the BCM 5.0. A MIB is a virtual information store that contains a collection of objects that are managed using Simple Network Management Protocol (SNMP). The MIB is software that defines the data reported by a computing or network device and the extent of control over that device.

Accessing MIB files

You access MIB files from the BCM Web Page. You can also access BCM MIB files as a zipped file from the Nortel Customer Service Site.

Accessing MIB files from the BCM web page

Use the following procedure to download MIB files from the BCM web page.

Procedure steps

Step	Action
1	Go to the BCM web page.
2	Click the **Administration Applications** link.
3	Click **BCM MIBs**.
4	Click **Download Device MIBs.** A **File Download** dialog box displays.
5	Click **Save** to download the file.

--End--

Copyright © 2009 Nortel Networks

Accessing MIB files from the Nortel Customer Service site

Use the following procedure to download MIB files from the Nortel Customer Service site.

Procedure steps

Step	Action
1	In your browser, go to http://www.nortel.com. The Nortel Customer Service Site home page opens.If you used the direct link, the Technical Support page opens. Go to step 5.
2	Select the **Support & Training** navigation menu, and then select **Technical Support, Software Downloads**. The Technical Support page opens. The Browse Product Support tab displays Product Finder fields.
3	In area 1, select **Product Families** from the selection field, and then select **BCM** from the selection box.
4	In area 2, select **Business Communications Manager (BCM)**.
5	In area 3, select **Software**.
6	Click the **Go** link. The Software tab opens.
7	In the by **Title/Number Keyword** field, enter mib, and then press the Enter key. A list of MIBs is displayed.
8	In the **Title** column, click the **BCM MIB** link. The Software Detail Information page opens.
9	Right-click the **BCM MIB** link, and select **Save Target As**. The File Download dialog box opens.
10	In the **Save As** dialog box, select the file or folder in which you want to save the MIB zip file, and then click the Save button. The MIB zip file is saved to your personal computer.

--End--

Copyright © 2009 Nortel Networks

Nortel Business Communications Manager 5.0

Administration and Security

Copyright © 2009 Nortel Networks. The information in this document is sourced in Canada, the United States, India and the United Kingdom.
All Rights Reserved.

Publication: NN40170-603
Document status: Standard
Document issue: 02.06
Document date: November 2009
Product release: 5.0
Job function: Administration
Type: Publication
Language type: EN

NORTEL, the globemark design, and the NORTEL corporate logo are trademarks of Nortel Networks.
Windows is a trademark of Microsoft Corporation.
All other trademarks are the property of their respective owners.

To provide feedback or report a problem with this document, go to www.nortel.com/documentfeedback.